ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Teledyne Dalsa / Coreco Imaging IC-PCI* at our website: *Click HERE*

IC-PCI

IC–PCI Hardware

Product Brief

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

IC-PCI Product Brief

Copyright© Imaging Technology Incorporated 1999
All rights reserved.
Printed in the United States of America.

All copyrights in this manual, and the hardware and software described in it, are the exclusive property of Imaging Technology Incorporated and its licensors. Claim of copyright does not imply waiver of Imaging Technologyy Incorporated's or its licensor's other rights in the work. See the following Notice of Proprietary Rights.

NOTICE OF PROPRIETARY RIGHTS

This manual and the related hardware and software are confidential trade secrets and the property of Imaging Technologyy Incorporated and its licensors. Use, examination, reproduction, copying, transfer and/or disclosure to others of all or any part of this manual and the related documentation are prohibited except with the express written consent of Imaging Technologyy Incorporated.

The information in this document is subject to change without notice. Imaging Technology Incorporated makes no representations or warranties with respect to the contents of this manual and specifically disclaims any implied warranties of merchantability or fitness for a particular purpose. Imaging Technology Incorporated assumes no responsibility for errors or omissions in this document.

Modular Vision Computer, MVC, MVC 150/40, MVC IC, and the IMAGING logo are trademarks of Imaging Technology Incorporated.

All other trademarks are the property of their respective owners.

Imaging Technology Incorporated
55 Middlesex Turnpike
Bedford, MA 01730–1421
Phone: +1.781.275.2700
FAX: +1.781.275.9590
Sales Email: info@imaging.com
http://www.imaging.com

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

EU Declaration of Conformity

Imaging Technology, Inc., 55 Middlesex Turnpike, Bedford, Massachusetts 01730 USA
tel: 781–275–2700 fax: 781–275–9590

We, the manufacturer, declare, under our sole responsibility, that the products identified in this declaration,

IC–PCI	IM–PCI	IMA	IMS	
CMC–PCI	CMC–VME	DMPC	DPX	FBV–PCI
AM–CLR	AM–DIG	AM–FA	AM–MTD	AM–VS
CM–ALU	CM–BC	CM–PA	CM–CLU	CM–GEO
CM–HF	CM–IPI	CM–MEM	CM–MMP	

and to which this declaration relates, are in conformity with the protection requirements of Council Directive 89/336/EEC as amended by 92/31/EEC and 93/68/EEC on the approximation of the laws of the Member States relating to **Electromagnetic Compatibility**.

Attestation is provided according to article 10 (2) of the Directive by a **Technical Construction File**.

Technical File Number: 41–4768 Issue: 2 Dated: 26 November 1996

The following standards are referenced in the file:

EN55011:1991	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) radio–frequency equipment	EC1000–4–2:1995	Electrostatic discharge immunity test
		EC1000–4–3:1995	Radiated, RF, EM field immunity test
		EC1000–4–4:1995	Electrical fast transient/burst immunity test
EN55022:1994	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	EC1000–4–5:1995	Surge immunity test
		EC1000–4–6:1994	Conducted immunity test
		EC1000–4–11:1994	Voltage Variation, Dips, and Interruptions
EN60601–1–2:1993	Medical electrical equipment		
EN50082–1:1991	Generic Immunity Standard	ENV50141:1993	Conducted RF Immunity

A Technical Report/Certificate has been issued in accordance with Part V (Reg 50) of the UK Regulations (SI 1992 No. 2372) by a UK appointed Competent Body, namely,

Interference Technology International Limited
41–42 Shrivenham Hundred Business Park
Shrivenham, Swindon, Wilts. SN6 8TZ
England, UK

Certificate number: C372IMT1.DWS Dated: 2 December 1996

We also declare that Low Voltage Directive 73/23/EEC does not apply to the above listed products since operating voltage levels are all below 75 volts DC.

The Authorized Signatory to this declaration, on behalf of the manufacturer, is identified below:

Signed: 
Name: Ernest G. Henrichon, Jr.
Title: VP of Engineering
Location: Bedford, Massachusetts, USA
Date: December 5, 1996

The Responsible Person, based within the EC, is identified below:

Antonius Joseph Schless
Imaging Technology Inc.
Schoonhout 46
4872 ME Etten–leur
The Netherlands
Telephone: 31–(0)76–502–2511
FAX: 31–(0)76–502–2705

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

CHAPTER 1
OVERVIEW

The IC-PCI is an image capture board that supports the AM (acquisition module) family of plug-in camera interfaces for fast image capture (up to 40 MHz). The IC-PCI has 2MB or 4MB of video RAM for image storage, and interfaces to the PCI bus for rapid transfer to the host system for processing and display. The IC-PCI conforms to the PCI short card mechanical spec (half card) allowing it to fit into any PCI bus machine.

1.1 INTRODUCTION

The IC-PCI is a low cost frame grabber with a high speed PCI bus interface. It uses the high data transfer rates of the PCI bus to eliminate the need for onboard processing or display circuitry. Image display and processing will be handled by the host resources. The IC-PCI supports all existing AM modules, in 8-bit, 16-bit, and 32-bit acquisition up to 40 MHz (the AM-FA acquires at frequencies up to 50 MHz, the IC-PCI reads data from the AM-FA at 40 MHz). Image memory is 2MB or 4MB in linear format, which allows acquisition from a variety of standard and non-standard cameras.

1.1.1 PCI Interface

The PCI interface allows the IC-PCI to operate as both PCI bus master and target (slave). The IC-PCI is capable of bus mastering data from image memory directly to a destination within the system (system memory or another PCI target, such as VGA display memory). The IC-PCI interface also supports target access to the registers, AM module , and image memory. PCI bus interrupts may be generated based on events occurring on the IC-PCI. The IC-PCI provides configuration registers required by the PCI specification which allow the board to be recognized on power-up for automatic system configuration (“plug-and-play”).

1.1.1.1 Bus Master Mode

In Bus Master Mode the IC-PCI takes control of the PCI bus and sources data and addresses for image memory transfers to the host system. The IC-PCI allows interlaced and non-interlaced AOIs (area-of-interest) of the stored image to be transferred to the host. Transfer rates up to 80MB per second (or higher) are attainable based on bus traffic, block size, and capabilities of destination device.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

1.1.1.2 Target (Slave) Mode

During access to the AM address space, IC-PCI registers, and image frame memory the board supports PCI Target (Slave) mode access. Target access allows (Random) byte read/write operations to the image memory region.

1.1.2 Image Memory

The IC-PCI is available with 2MB or 4MB image memory. The linear format employed does not impose restrictions on the size of images acquired and stored. Any image format up to the 2MB or 4MB capacity of memory can be acquired. The beginning of acquisition storage can be programmed on 4KB boundaries. Multiple images can be stored, but the hardware does not have restrictions to protect one image from being overwritten by another. If an image exceeds the 2MB or 4MB limit of memory, the memory address wraps back to zero and continues writing image data at the beginning of memory. The hardware has a sequential snap mode that acquires and stores up to eight sequential images

1.2 IC-PCI SPECIFICATIONS

This section gives the operating specifications for the IC-PCI.

Table 1–1. IC-PCI Models

Model	image memory
IC-PCI-2.0-*xx-xx*	2MB
IC-PCI-4.0-*xx-xx*	4MB

1.2.1 Memory

- Image Memory – 4MB or 2MB linear memory
- Supports AM trigger modes
- Acquires 8-bit, 16-bit and 24-bit image data at clock rates up to 40 MHz
- Acquires and stores 24-bit data, or 32-bits with most significant byte zeroed.

1.2.2 Host Access

- PCI Bus interfaces to video memory, control registers, and AM
- Image memory – occupies 2MB or 4MB of memory address space
- Registers – mapped into three different I/O spaces by the PCI host:
  PCI Configuration registers occupy configuration space
  PCI Interface Control registers occupy 16 DWORDs (64 bytes)
  IC-PCI Control registers occupy 32 bytes

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

- AM – occupies 8KB of memory address space
- Image data – 32-bit access only
- Control registers and AM – 16-bit word access only

1.2.3 Acquisition

- Frequency – Up to 40 MHz read access to FIFO on AM
  (8-bit=40MB/s, 16-bit=80MB/sec 24-bit=120MB/sec)
- Supports AM trigger modes
- Supports all AM family acquisition modules:
  AM-DIG: 8-bit, 16-bit, 24-bit digital cameras.
  AM-CLR: Color RGB,NTSC,PAL,S-Video cameras, 24-bit true color and 8-bit monochrome.
  AM-VS: monochrome cameras up to 25 MHz, 8-bit monochrome.
  AM-FA: monochrome cameras, 8-bit images; the AM-FA can acquire up to 50 MHz, but IC-PCI reads the FIFO on AM-FA at 40 MHz.
  AM-MTD: multi-tap digital cameras up to 20MHz per tap.
  AM-STD-COMP: Color NTSC,PAL,S-Video cameras and VCRs, 24-bit true color, 16-bit YCrCb, 8-bit monochrome.
  AM-STD-RGB: RS-170 and CCIR RGB color cameras, 24-bit true color and 8-bit monochrome.

1.2.4 Parallel I/O Port

All inputs and outputs are high-level single-ended TTL

- Data Input – 8-bit TTL; registered by strobe or direct read
- Data Output – 8-bit TTL; F244 buffers, source 5 mA, sink 64 mA
- Interrupt input – selectable rising or falling edge
- Strobe Input – for latching input data; selectable rising or falling edge
- Strobe Output – for latching output data
- Supply +5 Volts at 500 mA with resetting fuse

1.2.5 Environmental

The IC-PCI complies with the PCI short card mechanical spec, allowing installation in any slot of a PCI-bus based machine.

- Board Size – PCI short card: 6.88 by 4.205 inches
- Operating Temperature – 10-60 degrees Celsius.
- Relative Humidity – 0-90% non-condensing.
- Power Requirements – typical
  0.50 Amperes at +5 Volts (does not include AM)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table 1–2. Comparison of MVC Family

Model	*image memory*	*image frames**	*display*	*overlay memory**
PCVision™	2MB	linear memory	none (uses host display)	none
IC-PCI-2.0-	2MB	linear memory	none (uses host display)	none
IC-PCI-4.0-	4MB	linear memory	none (uses host display)	none
IM-PCI-11D-*x*-*x*	1MB	1 frame 1Kx1Kx8	video only, or host display	1MB 2Kx1Kx2
IM-PCI-22D-*x*-*x*	2BM	2 frames @1Kx1Kx8	video only, or host display	1MB 2Kx1Kx2
IM-PCI-24D-*x*-*x*	4MB	2 frames @1Kx1Kx8	video only, or host display	1MB 2Kx1Kx2
IM-PCI-33D-*x*-*x*	3MB	3 frames @1Kx1Kx8	video only, or host display	1MB 2Kx1Kx2
IC-VL-1.0-VGA-*x*-*x*	1MB	one frame, 1Kx1Kx8	VGA single head	0.5MB 1Kx1Kx4
IC-VL-1.5-VGA-*x*-*x*	1.5MB	3 frames @1Kx512x8	VGA single head	0.5MB 1Kx1Kx4
IC-VL-3.0-VGA-*x*-*x* IM-VL-3.0-VGA-*x*-*x*	3MB	3 frames @1Kx1Kx8	VGA single head	0.5MB 1Kx1Kx4
IC-VL-1.0-N-*x*-*x*	1MB	1 frame 1Kx1Kx8	none (use host display)	none
IC-VL-3.0-DG-*x*-*x* IM-VL-3.0-DG-*x*-*x*	3MB	3 frames @1Kx1Kx8	video only	0.5MB 1Kx1Kx4

* Frame sizes given are default sizes. Rectangular size is software programmable on IMA, IM-VL (IML), and IC-VL.

* PCVision and IC-PCI have linear memory, not organized in rectangular shapes, but frame buffers of any rectangular size (up to the image memory capacity) can be programmed.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

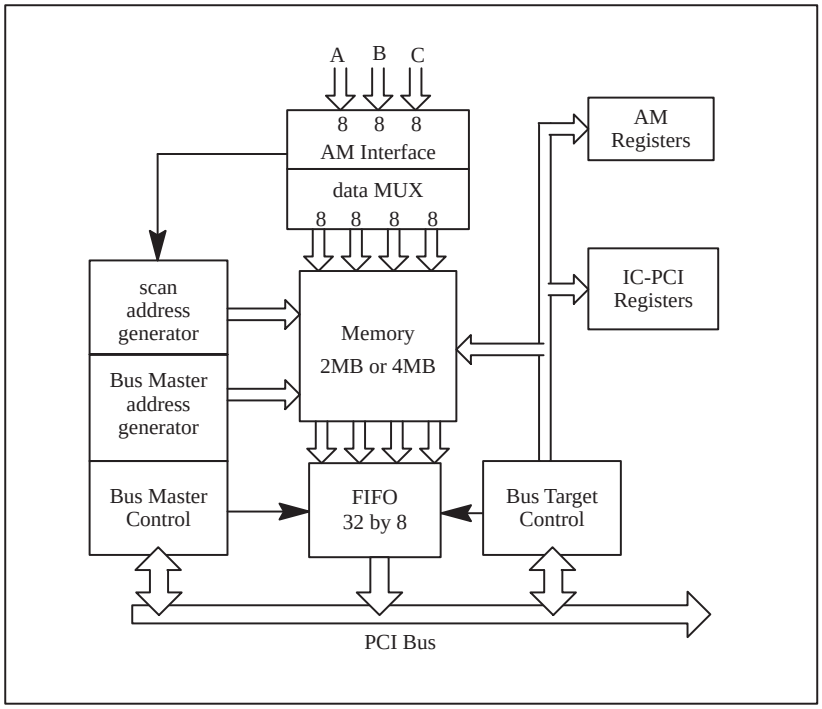


Figure 2–1. IC-PCI Block Diagram

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

APPENDIX A
VIDEO INPUT CONNECTIONS

VIDEO INPUT CABLES

Video input cables for the IC-PCI are divided into two categories: Break–out cables and Adapter cables. Bread-out cables are used with the AM-VS, AM-FA, and AM-CLR. The break–out cables connect to the IC-PCI board, and split the 44–pin connector into connectors for one, two, or four cameras, as illustrated in Figure A–1. The adapter cables connect the break–out cable to a camera. Break-out cables are not used with the AM-DIG, the AM-DIG adapter cables plug directly into the 44-pin connector.

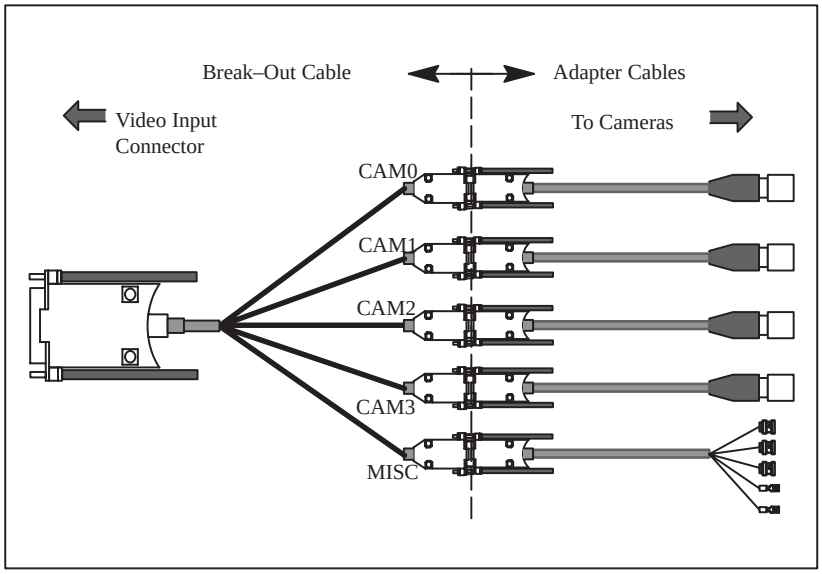


Figure A–1. Video Input Cables

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

VIDEO INPUT CONNECTOR

The video input connector is a high–density 44–pin D–Sub connector with camera inputs for the AM. The break–out cables separate these signals into five connectors. Table A–1 gives the **general** condition pin–out. *The functions change with each AM.* Refer to the reference manual for your Acquisition Module for the specific pin–out and function.

Table A–1. Video Input Connector

Pin	Signal Name	Function	Connector	Pin
1	+ 12 Volt-CAM3	+ 12 Volt camera power	CAM3	15
2	+ 12 GND-CAM3	+ 12V Return	CAM3	10
3	+ 12 Volt-CAM2	+ 12 Volt camera power	CAM2	15
4	+ 12 GND-CAM2	+ 12V Return	CAM2	10
5	+ 12 Volt-CAM1	+ 12 Volt camera power	CAM1	15
6	+ 12 GND-CAM1	+ 12V Return	CAM1	10
7	+ 12 Volt-CAM0	+ 12 Volt camera power	CAM0	15
8	+ 12 GND-CAM0	+ 12V Return	CAM0	10
9	+ 12 Volt-input	External +12V Supply	MISC	1
10	+ 12 GND-input	External +12V Return	MISC	6
11	DGND	Digital Ground	MISC	8
12	CAM0-GND	Analog Ground	CAM0	6,7,8
13	CAM1-B	not used	CAM1	1
14	CAM2-A GND	Analog Ground	CAM2	7
15	CAM3-A	Analog Video	CAM3	2
16	CAM3-C/HSYNC	CSYNC or HSYNC	CAM3	13
17	CAM3-DGND	Digital Ground	CAM3	5
18	CAM2-VSYNC	VSYNC or Vdrive	CAM2	14

(continued)

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table A–1 Continued. (Video Input Connector)

Pin	Signal Name	Function	Connector	Pin
19	CAM1-VSYNC	VSYNC,Vdrive or FEN	CAM1	14
20	CAM1-CLK	PCLK1, VSCLOCK1	CAM1	4
21	CAM1-MISC	Frame Reset, Line Xfer, etc.	CAM1	9
22	CAM0-CLK	PCLK0,VSCLOCK0	CAM0	4
23	CAM0-MISC	Frame Reset, Line Xfer, etc.	CAM0	9
24	+12 Volt-input	External + 12 Volt Supply	MISC	2
25	+12 GND-input	External + 12 Volt Return	MISC	7
26	MISC1	Strobe, Trigger, etc.	MISC	3
27	CAM0-B	Analog Video	CAM0	1
28	CAM1-C	not used	CAM1	3
29	CAM1-A	Analog Video	CAM1	2
30	CAM3-A Gnd	Analog Gnd	CAM3	7
31	CAM3-VSYNC I/O	VSYNC or Vdrive	CAM3	14
32	CAM2-C/HSYNC	CSYNC or HSYNC	CAM2	13
33	CAM2-DGND	Digital GND	CAM2	5
34	CAM1-C/HSYNC	CSYNC,HSYNC or LEN	CAM1	13
35	CAM1-DGND	Digital GND	CAM1	5
36	CAM0-C/HSYNC	CSYNC,HSYNC or LEN	CAM0	13
37	CAM0-VSYNC	VSYNC,Vdrive or FEN	CAM0	14
38	CAM0-DGND	Digital GND	CAM0	5
39	MISC2	Strobe, Trigger, etc.	MISC	4
40	MISC3	Strobe, Trigger, etc.	MISC	5
41	CAM0-C	Analog Video	CAM0	3
42	CAM0-A	Analog Video	CAM0	2
43	CAM1 GND	Analog Gnd	CAM1	6,7,8
44	CAM2-A	Analog Video	CAM2	2

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

PARALLEL I/O CONNECTOR

The IC-PCI provides a digital I/O capability for controlling or monitoring external events. The digital input and output lines on the 26-pin header can be cabled to a 25-pin D-Sub connector that occupies an open slot in the chassis.

Table A–2. 26-Pin Dual-Row Header

Header Pin #	*Signal name*	*Description*	*D-Sub Connector Pin #*
1	GND	Digital ground	1
3	GND	Digital ground	2
5	GND	Digital ground	3
7	GND	Digital ground	4
9	IN1	Digital Input pin 1	5
11	IN3	Digital Input pin 3	6
13	IN5	Digital Input pin 5	7
15	IN7	Digital Input pin 7	8
17	OUT0	Digital Output pin 0	9
19	OUT2	Digital Output pin 2	10
21	OUT4	Digital Output pin 4	11
23	OUT6	Digital Output pin 6	12
25	+5 V	+5V power output	13
2	STROBE_O	Strobe Output	14
4	STROBE_I	Strobe Input	15
6	I/O_INT	Interrupt Input	16
8	IN0	Digital Input pin 0	17
10	IN2	Digital Input pin 2	18
12	IN4	Digital Input pin 4	19
14	IN6	Digital Input pin 6	20
16	+5 V	+5 V power output	21
18	OUT1	Digital Output pin 1	22
20	OUT3	Digital Output pin 3	23
22	OUT5	Digital Output pin 5	24
24	OUT7	Digital Output pin 7	25
26	n/c	no connection	–

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

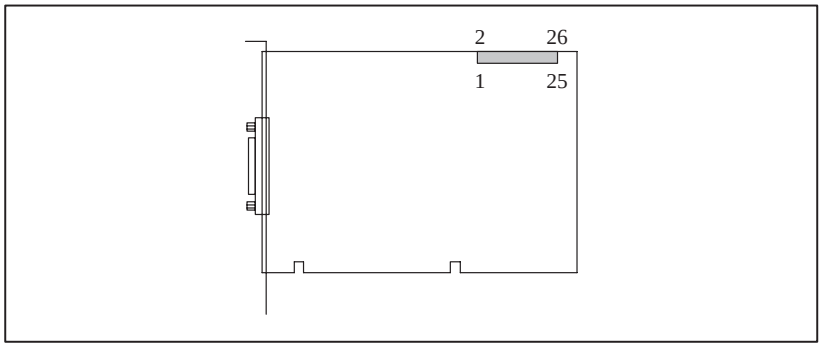


Figure A–2. Parallel I/O Connector

BREAK–OUT CABLES

Three different break–out cables separate the connections on the 44–pin connector into two, three, or five connectors: 15–pin D–Sub connectors for each camera, and a 9–pin D–Sub for miscellaneous connections.

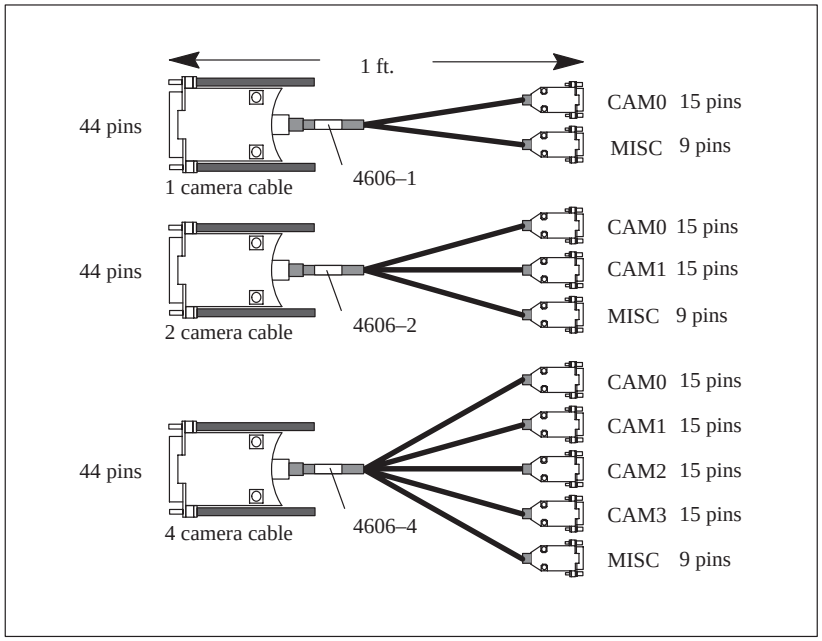


Figure A–3. Break–Out Cables

The specific functions of each camera connector change with each AM. For example; with the AM–VS, CAM0 can be a single–ended or differential analog video input, RS–170, CCIR, or Variable–scan. With the AM–CLR, CAM0 is an RGB RS–170 or CCIR video input.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

CAMERA CONNECTORS

The specific functions of each camera connector change with each AM. For example; with the AM–VS, CAM0 can be a single–ended or differential analog video input, RS–170, CCIR, or Variable–scan. With the AM–CLR, CAM0 is an RGB RS–170 or CCIR video input. Tables A–3 through A–7 give the general signal pin–outs for the five break-out connectors. *Refer to the reference manual for your Acquisition Module for the specific pin–out and function.*

Table A–3. CAM0 Connector

Pin	Signal	Purpose
1	Analog Video–B	Camera 0 Analog Video
2	Analog Video	Camera 0 Analog Video
3	Analog Video–C	Camera 0 Analog Video
4	CLK	Camera 0 Pixel Clock I/O
5	DGND	Camera 0 Digital Gnd
6	Analog Ground–B	Camera 0 Analog Gnd
7	Analog Ground	Camera 0 Analog Gnd
8	Analog Ground–C	Camera 0 Analog Gnd
9	MISC	Camera 0 Misc.
10	+12 Volts GND	Camera 0 +12V return
13	C/HSYNC	Camera 0 C/Hsync I/O
14	VSYNC/VDRIVE	Camera 0 Vdrive I/O
15	+12 Volts	Camera 0 Power

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table A–4. CAM1 Connector

Pin	Signal	Camera Input
1	Analog Video–B	Camera 1 Analog Video
2	Analog Video	Camera 1 Analog Video
3	Analog Video–C	Camera 1 Analog Video
4	CLK	Camera 1 Pixel Clock I/O
5	DGND	Camera 1 Digital GND
6	Analog Ground–B	Camera 1 Analog Gnd
7	Analog Ground	Camera 1 Analog Gnd
8	Analog Ground–C	Camera 1 Analog Gnd
9	MISC	Camera 1 Misc.
10	+12 Volts GND	Camera 1 +12V return
13	C/HSYNC	Camera 1 C/Hsync I/O
14	VSYNC/VDRIVE	Camera 1 Vdrive I/O
15	+12 Volts	Camera 1 Power

Table A–5. CAM2 Connector

Pin	Signal	Purpose
2	Analog Video	Camera 2 Analog Video
5	DGND	Camera 2 Digital GND
7	Analog Ground	Camera 2 Analog GND
10	+12 Volts GND	Camera 2 +12v Return
13	C/HSYNC	Camera 2 C/Hsync I/O
14	VSYNC/VDRIVE	Camera 2 Vdrive I/O
15	+12 Volts	Camera 2 Power

Table A–6. CAM3 Connector

Pin	Signal	Purpose
2	Analog Video	Camera 3 Analog Video
5	DGND	Camera 3 Digital GND
7	Analog Ground	Camera 3 Analog Gnd
10	+12 Volts GND	Camera 3 +12V return
13	C/HSYNC	Camera 3 C/Hsync I/O
14	VSYNC/VDRIVE	Camera 3 Vdrive I/O
15	+12 Volts	Camera 3 Power

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Table A–7. MISC Connector

Pin	Signal	Purpose
1,2	+12 Volts Input	Camera Power Input
3	MISC 1	Misc.
4	MISC 2	Misc.
5	MISC 3	Misc.
6,7	+12 Volts GND Input	Camera Power GND input
8	DGND	Misc. Digital Gnd

CAMERA ADAPTER CABLES

The Misc. Cable plugs into the 9–pin connector on the break–out cables. The other adapter cables plug into the 15–pin D–Sub connectors on the break–out cables, and have camera connectors at the other end. Figure A–4 illustrates a few of the adapter cables available. *Other adapter cables are available;* refer to the Installation Guide, AM Hardware Manual, and consult your sales representative or Imaging Technology Incorporated. Refer to Imaging Technology Online at: www.imaging.com for the camera configuration guide at: http://www.imaging.com/producttour/camguide/camguide.html

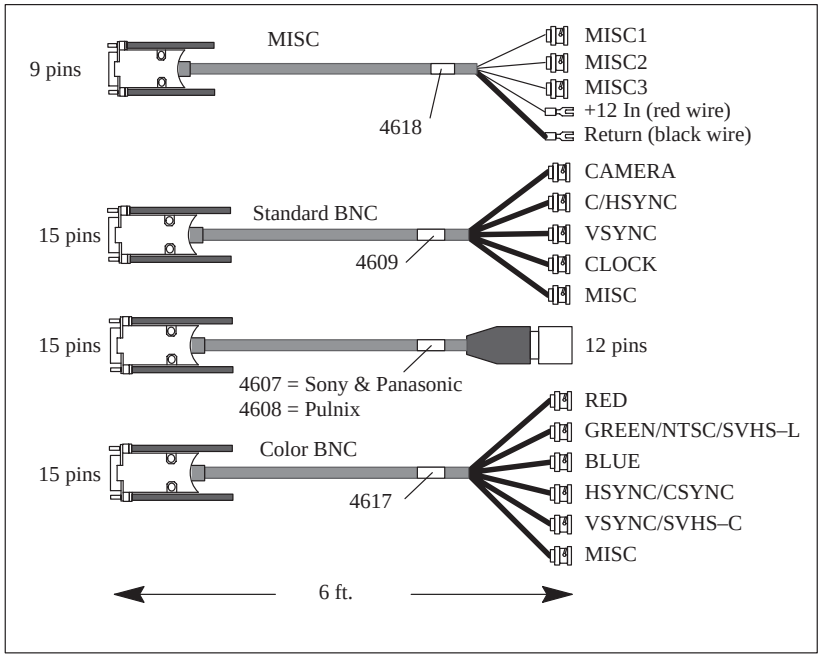


Figure A–4. Camera Adapter Cables

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP