

## MAVIS IM-30/IM-100 Series

### Monochrome 1394a Industrial CMOS Camera



#### Features:

- Progressive-scan for on-the-fly applications
- Acquisition speed up to 100fps in full resolution
- Build-in 8MB memory buffer
- Flexible electric exposure control
- Robust external trigger I/O interface supported
- Free SDK API for VC, VB, BCB and C#.Net 2003
- Interface sample programs for eVision
- Supports Windows2000 SP4/XP SP2 driver

#### Applications:

- Semiconductor
- Component inspection
- Manufacturing quality control
- Food and beverage inspection
- Microscopy and medical imaging
- Biometrics

#### Introduction:

The MAVIS is a new vision product line of ICP DAS, designed for industrial machine vision applications. The MAVIS IM series is designed to meet IEEE 1394 standards, while offering industry leading VGA resolution, high-performance frame rates, and a competitive price point! The Mavis IM30 offers 30fps for low-cost progressive-scan inspection applications. The MAVIS IM100 can offer 100fps, in full resolution for advanced high-speed inspection applications.

#### Software Supported:

In continuing to promote the ICP DAS standard, for free and open product architecture, the Mavis systems will support the majority of popular video drivers, utilities, APIs and interfaces, free of charge! ICP DAS firmly believes in the freedom of choice for consumer software support, and looks to offer the utmost flexibility, in terms of research and development!

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- Windows 2000 SP4 /XP SP2
- LabVIEW

#### Free API supported:

- Microsoft Visual C++
- Microsoft Visual Basic
- Microsoft Boland C++ Builder
- Microsoft C#.Net 2003

#### Free ICP DAS Utility:

##### EZView

EZView utility provides a simple yet powerful means to setup, configure, test, and debug the vision system. User can manually control the MAVIS IM-30/IM-100 camera series without any programming requirement.



##### EzVIEW\_Fly

EzVIEW\_Fly utility now supported PISO-PS400, ET-M8194H and FRNET I/O. User can very easily to setup, configure, test, and debug about MAVIS cameras image acquisition by external hardware trigger in EzVIEW\_Fly utility.

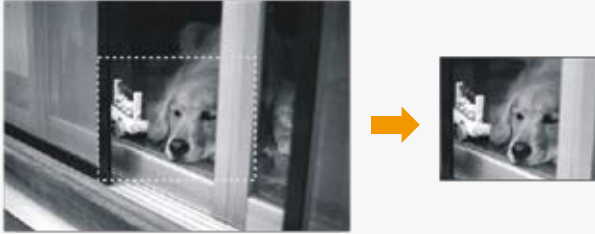


## Advanced Features:

### AOI Image Acquisition Function

The AOI (Area of Interest) function allows users to select an area of interest, for the camera's CMOS array to specifically read, display, and transmit.

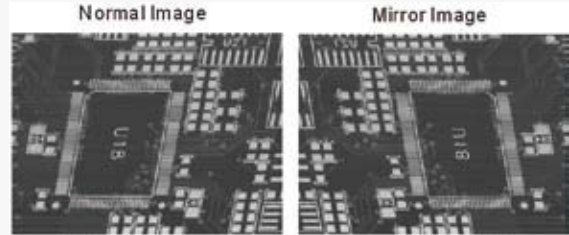
The AOI function will enhance the acquisition speed and saving the image processing time.



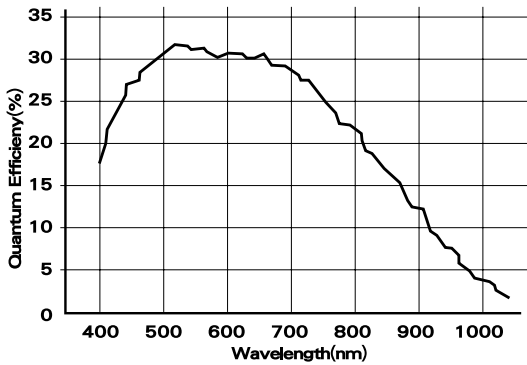
### Mirror Image Function

When user enabled the mirror image function, the camera will reflect the image's vertical axis, before data is transmitted out of the camera.

The Mirror Image function can offer the reflection image raw data without any software process distortion.



## Spectral Response:



### IM Series Camera Specification

Item	IM-30	IM-100
Image sensor	1/2" CMOS Sensor Micron MT9V403, Pixel size: 9.9um x 9.9um	
Video output pixels	640(H) x 480(V)	
Gain control	0 ~ 12dB setting via communication command	
Power supply	+12VDC normal (Supply via 1394 cable)	
Power consumption	Max. ~ 1.7W at 12V	
Acquisition mode	Free Run (exposure time programmable ), External random trigger	
Connector Interface	6-Pin IEEE 1394 connector(for video and power) 10-Pin GPIO connector (Sam Woo SN series)	
GPIO connector	TTL level with 2 input, 4 output and one +5VDC output	
Frames per second	30fps	100fps
Video mode	Initial mode: 640 x 480 Scalable mode: by AOI	
Protocol	IEEE 1394a version. 1.31 (transfer speed 400Mbps)	
Test image	Gray value internal test pattern generated	
Exposure Time	Programmable via IEEE 1394 bus	
Gain and Brightness	Programmable via IEEE 1394 bus	
EMC condition	CE/FCC	
Dimension	80mm (H) x 48mm(W) x 30mm(D)	
Weight	100g	
Lens Adaptor	C/CS Mount	

### Interface PIN Assignment



Pin	Name
1	Output 0
2	Input 0
3	Output 1
4	Input 1
5	Output 2
6	NC
7	Output 3
8	NC
9	GND
10	NC

Pin	Name	Pin	Name
1	+12VDC	4	TPB+
2	GND	5	TPA-
3	TPB-	6	TPA+

## Ordering Information:

ICP DAS offers three additional accessories, to further enhance the performance of your high-speed AOI inspection system!

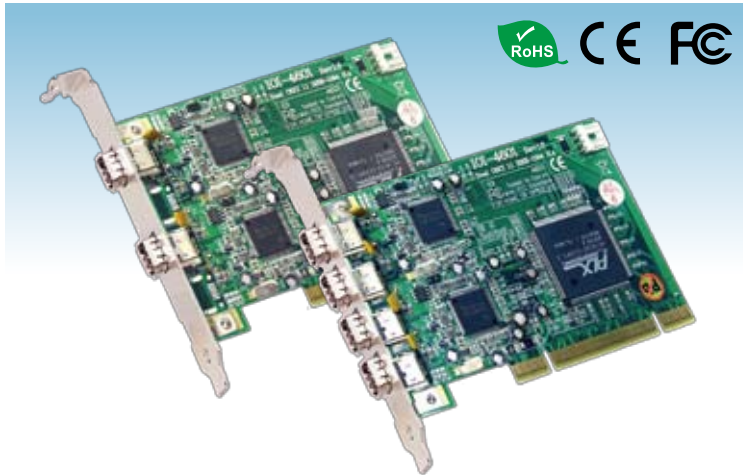
Model No.	Product Description
MAVIS IM-30	640 x 480, Monochrome, 30fps, 1394 Camera
MAVIS IM-100	640 x 480, Monochrome, 100fps, High-Speed 1394 Camera

## Accessories:

Model No.	Product Description
IOI-4601-21	IEEE 1394a Dual ports full speed interface card
IOI-4601-22	IEEE 1394a 4-Channels interface card
CA-1394-45	6P-6P 1394 Latch Cable (L:4.5m)
1394R3B	1394 Repeater (1port to 2ports)

## IOI-4601-21 IEEE 1394a Dual ports full speed interface card

## IOI-4601-22 IEEE 1394a 4-Channels interface card



### Features:

- 32-bit, 33MHz Universal PCI Interface
- Dual ports data transmission (each port 400Mbps)
- PCI to PCI Bridge
- DC-12V IEEE 1394 bus power connector

### Applications:

- Standard 1394a Camera connection
- IEEE 1394a compliant device connection

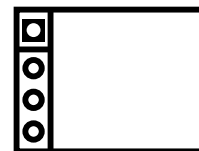
### Introduction:

The IOI-4601 series is dual IEEE 1394a host controller PCI interface card. It's capable of supporting dual ports data transmission at rates of 400Mbps per port. The IOI-4601-21 is full speed 2-channels interface card; The IOI-4601-22 is 4-channels interface card and each 1394a host controller will handle 2-channels data input by share bandwidth.

### IOI-4601 Interface card Specification

Item	Model No.	
	IOI-4601-21	IOI-4601-22
Host Bus	32-bit PCI local bus complies with PCI 2.1 and 2.2 specification Use only one IRQ for both OHCI 1.1 channels	
Interface Protocol	Bus Master DMA	
1394 Bus Transfer Rate	100/200/400 Mbps	
Host Bus Burst Data Rate	Up to 133 MB/s burst rate	
IEEE-1394 to PCI Chip	Ti TSB43AB21 OHCI controller x 2	
1394 Connector	6-pin 1394a connector x 2	6-pin 1394a connector x 4
1394 Bus Power Connector	Mini 4-pin DC +12V power connector	
Bus Power Connector	with mini 4-pin DC + 12V Power Connector	
Performance	Maximum 1394 Bus Transfer is 800 Mbps (400 Mbps per channel)	
Dimension	121.19mm x 132.32mm (Includes connector)	
Net Weight	69g	
Certificated	CE, FCC	

### Interface PIN Assignment








J1 DC +12V

Pin1	+12V
Pin2	GND
Pin3	GND
Pin4	VCC5







### Ordering Information:

Model No.	Product Description
IOI-4601-21	IEEE 1394a Dual-port full speed interface card
IOI-4601-22	IEEE 1394a 4-Channels interface card

## Terminal Boards for PISO-PS200/I-8092F

 <p><b>DN-8237GB</b> Photo-isolated terminal board for PISO-PS200/I-8092F</p> <ul style="list-style-type: none"> <li>•For General Purpose Usage</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>	 <p><b>DN-8237DB</b> Photo-isolated terminal board for PISO-PS200/I-8092F</p> <ul style="list-style-type: none"> <li>•For Delta ASDA-A Servo Amplifier</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>
 <p><b>DN-8237MB</b> Photo-isolated terminal board for PISO-PS200/I-8092F</p> <ul style="list-style-type: none"> <li>•For Mitsubishi J2 Servo Amplifier</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>	 <p><b>DN-8237PB</b> Photo-isolated terminal board for PISO-PS200/I-8092F</p> <ul style="list-style-type: none"> <li>•For Panasonic Minus-A Servo Amplifier</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>
 <p><b>DN-8237YB</b> Photo-isolated terminal board for PISO-PS200/I-8092F</p> <ul style="list-style-type: none"> <li>•For Yaskawa Sigma Servo Amplifier</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>	


## Terminal Boards for PISO-PS400/I-8094F/I-8094A/I-8094H

 <p><b>DN-8468GB</b> Photo-isolated terminal board for PISO-PS400/I-8094F/I-8094A/I-8094H</p> <ul style="list-style-type: none"> <li>•For General Purpose Usage</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>	 <p><b>DN-8468DB</b> Photo-isolated terminal board for PISO-PS400/I-8094F/I-8094A/I-8094H</p> <ul style="list-style-type: none"> <li>•For Delta ASDA-A Servo Amplifier</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>
 <p><b>DN-8468MB</b> Photo-isolated terminal board for PISO-PS400/I-8094F/I-8094A/I-8094H</p> <ul style="list-style-type: none"> <li>•For Mitsubishi J2 Servo Amplifier</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>	 <p><b>DN-8468PB</b> Photo-isolated terminal board for PISO-PS400/I-8094F/I-8094A/I-8094H</p> <ul style="list-style-type: none"> <li>•For Panasonic Minus-A Servo</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>
 <p><b>DN-8468YB</b> Photo-isolated terminal board for PISO-PS400/I-8094F/I-8094A/I-8094H</p> <ul style="list-style-type: none"> <li>•For Yaskawa Sigma Servo Amplifier</li> <li>•High speed photo-coupling isolated.</li> <li>•Supporting pulse command type step motors or servo motors.</li> <li>•Providing power led and other status LEDs (home, limit switches, ...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>	 <p><b>DN-8468FB</b> Photo-isolated terminal board for PISO-PS400/I-8094F/I-8094A/I-8094H</p> <ul style="list-style-type: none"> <li>•For FUJI FALDIC-W servo Amplifier</li> <li>•High speed photo-coupling isolation</li> <li>•Supporting Pulse command type stepper motors or servo motors.</li> <li>•Providing power led and other status LEDs (Home, Limit switch...)</li> <li>•Providing FRnet terminal for high-speed serial I/O expansion when the mother supports FRnet.</li> </ul>

## Terminal Boards for PISO-PS600/VS600/PMDK

 <p><b>DN-8368GB</b> Photo-isolated terminal board for PISO-PS600/PISO-VS600/PISO-PMDK</p> <ul style="list-style-type: none"> <li>•For General Purpose Usage</li> <li>•High speed photo-coupling isolation</li> <li>•Supporting Pulse command type stepper motors or servo motors.</li> <li>•Providing power led and other status LEDs( Home, Limit switch...)</li> </ul>	 <p><b>DN-8368MB</b> Photo-isolated terminal board for PISO-PS600/PISO-VS600/PISO-PMDK</p> <ul style="list-style-type: none"> <li>•For Mitsubishi J2 Servo Amplifier</li> <li>•High speed photo-coupling isolation</li> <li>•Supporting Pulse command type stepper motors or servo motors.</li> <li>•Providing power led and other status LEDs( Home, Limit switch...)</li> <li>•Providing RS-232 connector for CN3 of Mitsubishi J2 Servo Amplifier.</li> <li>•Providing jumper to set Encoder source from servo amplifier or expansion linear scar.</li> </ul>	 <p><b>DN-20M</b> Manual-Pulsar-Generator(MPG) and FRnet input board for PISO-PS600/VS600/PMDK</p> <ul style="list-style-type: none"> <li>•MPG and FRnet connector Block with Din-Rail mounting</li> <li>•20-pin SCSI-II connector</li> <li>•Pin to Pin screw terminal for Manual Pulsar Generator connected</li> <li>•Screw terminals for easy field wiring</li> <li>•RJ-45 for FRnet connector</li> <li>•Dimension:103mm x 86mm</li> </ul>
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## Encoder Input Board

 <p><b>DN-68</b> Encoder Input Board for PISO-Encoder300/600</p> <ul style="list-style-type: none"> <li>•I/O connector Block with Din-Rail Mounting</li> <li>•68-pin SCSI-II connector</li> <li>•Pin to Pin screw terminal for I/O connected</li> <li>•Screw terminals for easy field wiring</li> <li>•Dimension:103mm x 86mm</li> </ul>
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## Accessories for MAVIS

 <p><b>CA-1394-45</b> IEEE 1394a 4.5m cable</p>
 <p><b>1394R3B</b> 1394 Repeater (1port to 2ports)</p>


## Accessories for Sparrow

 <p><b>CA-1394AB-45</b> 1394a to 1394b high-flex bilingual 4.5m cable</p>
 <p><b>CA-1394B-45</b> 1394b high-flex 4.5m cable</p>

## Power Module

 <p><b>DP-665</b> 24V/2.5A, 5V/0.5A Power Supply Input voltage : 85Vac to 264Vac Input frequency : 47Hz to 63Hz Outputs : +24V/2.5A ; +5V/0.5A</p>
 <p><b>DP-1200</b> 24V/5A Power Supply Input voltage : 85Vac to 264Vac Input frequency : 47Hz to 63Hz Outputs : +24V/5A</p>

## Cables:

 <p><b>CA-3710</b> DB-37 Male-Male D-sub cable 1M Cable for Daughter Board(45°)</p>	 <p><b>CA-3720</b> DB-37 Male-Male D-sub cable 2M Cable for Daughter Board(45°)</p>	 <p><b>CA-3710DM</b> DB-37 Male-Male D-sub cable 1M Cable for Daughter Board(180°)</p>	 <p><b>CA-3730DM</b> DB-37 Male-Male D-sub cable 3M Cable for Daughter Board(180°)</p>
 <p><b>CA-3750DM</b> DB-37 Male-Male D-sub cable 5M Cable for Daughter Board(180°)</p>	 <p><b>CA-SCSI15</b> SCSI II 68-pin &amp; 68-pin Male connector cable 1.5M</p>	 <p><b>CA-SCSI30</b> SCSI II 68-pin &amp; 68-pin Male connector cable 3M</p>	 <p><b>CA-SCSI50</b> SCSI II 68-pin &amp; 68-pin Male connector cable 5M</p>
 <p><b>4PCA-MINI68-15</b> Mini SCSI II 68-pin to SCSI II 68-pin &amp; 68-pin Male connector cable 1.5M</p>	 <p><b>CA-SCSI20-M1</b> SCSI II 20-pin &amp; 20-pin Male connector cable 1M, for Mitsubishi motor</p>	 <p><b>CA-SCSI20-M3</b> SCSI II 20-pin &amp; 20-pin Male connector cable 3M, for Mitsubishi motor</p>	 <p><b>CA-SCSI20-M5</b> SCSI II 20-pin &amp; 20-pin Male connector cable 5M, for Mitsubishi motor</p>
 <p><b>CA-SCSI50-D1</b> SCSI II 50-pin &amp; 50-pin Male connector cable 1M, for Delta ASDA A series motor</p>	 <p><b>CA-SCSI-D3</b> SCSI II 50-pin &amp; 50-pin Male connector cable 3M, for Delta ASDA A series motor</p>	 <p><b>CA-SCSI50-D5</b> SCSI II 50-pin &amp; 50-pin Male connector cable 5M, for Delta ASDA A series motor</p>	 <p><b>CA-SCSI50-PY1</b> SCSI II 50-pin &amp; 50-pin Male connector cable 1M, for Panasonic &amp; Yaskawa motor</p>
 <p><b>CA-SCSI30-PY3</b> SCSI II 50-pin &amp; 50-pin Male connector cable 3M, for Panasonic &amp; Yaskawa motor</p>	 <p><b>CA-SCSI50-PY5</b> SCSI II 50-pin &amp; 50-pin Male connector cable 5M, for Panasonic &amp; Yaskawa motor</p>	 <p><b>4PCA-2P4C-0100</b> 2P4C cable For FRNet-Modules, Length:100M</p>	

## Accessories for FALCON

 <p><b>CA-SF1LAN</b> 6-pin Hirose Female to RJ-45 LAN cable</p>	 <p><b>CA-SF1TRIG</b> 6-pin Hirose Male to open end Trigger and power cable</p>
 <p><b>CA-SF1COM</b> 12-pin Hirose Female to open end COM port serial I/O cable</p>	 <p><b>CA-SF1VGA</b> 10-pin Hirose Male to VGA D-sub interface cable (SF-163V)</p>