

# Ultravision P-Link

Volume 4, November, 2000

## In This Issue

<i>DALSA Large Resolution Linescan Cameras - CL/T-P4-6144/8192W</i>	1
<i>JAI Double Speed High Resolution Progressive Scan Camera - CV-M4</i>	1
<i>Camera Link? Channel Link?</i>	2
<i>JAI DSP Micro Colour CCD Camera - CV-M820</i>	3
<i>DALSA Advance Linescan - Eclipse</i>	3
<i>Directed Perception Computer Controlled Pan-Tilt</i>	3
<i>SMD High Resolution High Speed CCD Area Scan Camera</i>	4
<i>Vision Components Smart Video Camera</i>	4

Published & printed by Ultravision  
Sales & Marketing Department

## Ultravision P-Link

Block 1008 Aljunied Ave 4 #01-23  
Singapore 389909  
www.ultravision.com.sg

For more information regarding anything in this newsletter, please write to or contact any of the Executive Committee Members. We appreciate any comments, recommendations and contributions for the next issue. If you'd like to help or show your support in any other way, please let us know.

Harry ..... 842 3239  
Wee Khiang ..... 842 0500

Editor Lee Wee Khiang  
Sub-Editor Harry Khoo Kay Leong  
Design & Layout Harry Khoo Kay Leong

## What's New

### DALSA LARGE RESOLUTION LINESCAN CAMERAS (CL/T-P4-6144/8192W)

DALSA is pleased to announce their new addition of large resolution *PIRANHA* linescan cameras are available today.

The large resolution of the *CL/T-P4* combined with pinned photodiode technology and a single voltage supply, delivers the image quality and ease of use that customers expect from *DALSA*.

#### Features:

- 6144 or 8192 pixels
- 25MHz/channel for 50MHz and 100MHz throughput rates respectively on dual and quad output pixels
- Low image lag - "pinned photodiode"
- 7um square pixels
- 8-bit digital output from 10-bit digitizer, LVDS format
- Single voltage power supply ready

#### Applications:

- The *CL/T-P4-6144/8192W* directly targets parcel sorting. Parcel sorting has been the most aggressive market in requiring large resolutions combines with high throughput
- Large web inspection and PCB inspection also demand the resolution, speed and responsivity these cameras have to offer. ■

### JAI DOUBLE SPEED HIGH RESOLUTION PROGRESSIVE SCAN CAMERA (CV-M4)

From the popular *CV-M1* high resolution camera, *JAI* has doubled its frame output to 24f/s. With this double speed, the camera is provided with LVDS digital output or camera link output which need to be confirmed when you, our customer, placed the order confirmation. All other familiar features remain unchanged.

This new camera model is ready and available from the month of October 2000.

## PIRANHA



6k&8k  
Line Scan  
Cameras  
Available  
Now!

.....continue on page 3.

## Editor's Message

In this issue, we are featuring some new camera models launch and an introduction to 3 new manufacturers products that Ultravision are now representing. Also, we have a special review of the latest "in-word" in machine vision - *Camera Link* and *Channel Link*.

Recently, *DALSA* has launch some successful new cameras - *Piranha 6K* and *8K Linescan* and the *Eclipse Advance Linescan*. Trademarks of the new models are single input power supply, smaller camera body and programmable.

*JAI* has gone digital, for the reason of meeting customer demand for higher frame rate, in their new mega-pixel new model, *CV-M4*. *JAI* has also miniaturised a new standard colour camera model to a mere diameter of 17mm by 116mm length for space constraint application.

*Ultravision's* 3 new manufacturers are *SMD*, *Directed Perception* and *Vision Components*. *SMD* is an area scan camera manufacturer specialising in high resolution and/or high speed CCD camera. *Direct Perception* specialises in computer-controlled pan-tilt. And *Vision Components* specialises in smart video camera.

As the terms *Camera Link* and *Channel Link* are pretty new, it is not surprising for anyone to be confused of which term means what? Therefore, we had included a short discussion on their meaning and the advantages to our application.

Enjoy reading! ■

## Ultravision - The Machine Vision Specialist

### Special Review

#### CAMERA LINK? CHANNEL LINK?

*Camera Link* is a new interface standard defined by a consortium of camera and framegrabber manufacturers. It is to simplify and to standardise camera interfacing to acquisition systems. Besides using channel link for communication, the camera link also defines the port, the cable and the pin out for data, control and asynchronous reset signal, all onto one connector. The power connector is separated and left to the camera developer.

Whereas *Channel Link* is the interface protocol which is developed by National Semiconductor. One channel link chip serialises 28bits of data into 4 differential pairs of data for a 7:1 data compression, one clock differential pair (STROBE) and another pin for GND. With 7:1 compression a digital camera that sends data out at 40MHz per tap will send data out at 280MHz per tap.

The connector; model MDR26; is developed by 3M. The first connector contains four differential pairs for control signals, two differential pairs for asynchronous serial communications, and enough conductors for one *Channel Link Chip*. The second connector can handle the

---

*Definitions: Camera link is a new interface standard for camera interfacing whereas Channel Link is the interface protocol.*

---

second and third *Channel Link Chips*. This means that for single-tapped, dual-tapped and 3x8-bit RGB products, camera needs only to use one connector. Two connectors are use for camera with quad or eight output.

With 280MHz, the camera, connector, cable and framegrabber will have harmonic frequencies in the GHz range. At these frequencies, the cable and connector construction are vital. It is no longer possible to have "break out" cables from the camera connector without taking large risks when it comes to stable data transmission. Due to skew tolerances of the *Channel Link Chips*, it is also not possible to have multi-camera synchronisation. The processor or framegrabber will have to handle this. Also, maximum cable length is 10 meter.

With *Camera Link*, it reduces large amounts of cable inventory and save time by offering the system integrator an "off-the-shelf" solution. Therefore, also save cost. ■

.....from page 1.

## What's New... (continue)

Features:

- 2/3" HAD IT CCD sensor
- 1300(H)x1030(V) effective pixels
- 6.7umx6.7um sq pixel
- S/N > 50dB
- LVDS or camera link video output
- 10bit A/D digitizer
- 24frame/sec (normal) or 48frame/sec (binning)
- 1.0lux on sensor sensitivity
- RS232C interface
- 40mm(H)x50mm(W)x90mm(D)

### JAI DSP MICRO COLOUR CCD CAMERA (CV-M820)

As the name imply, this camera is extremely compact. This camera is suitable for application where space is limited.



Features:

- Super high sensitive 1/2" IT HAD CCD sensor
- PAL: 752(H)x582(V) pixels  
NTSC: 768(H)x494(V) pixels
- 450 TV lines resolution
- Based on the latest DSP technology
- RS232C interface
- VBS and Y/C video output
- Positive/negative colour reversal on Y/C video
- Backlight compensation with selectable pattern
- Shutter up to 1/10,000sec, auto shutter and flickerless

- Horizontal scan reversal (mirror image)
- Compact size Ø17 x 115.8mm

### DALSA ADVANCED LINESCAN (ECLIPSE)

"Don't be afraid of the dark" is the slogan use by DALSA in their promotion of their advanced linescan camera. This



new small body camera offers 100x more responsivity than standard linescan and is 10x more responsive than previous TDI camera.

Features:

- Available resolution are 512, 1024 and 2048 x 96 TDI
- 100X more responsive than standard line scan
- Programmable pixel-to-pixel correctio, line rate, gain and more
- Bidirectional scanning
- Compact package, high speed output
- Single 12V power supply
- 100% fill factor

Applications:

- Postal sorting (bar-code reading, address lift, cancellation mark detection)
- Web inspection
- Electronics and semiconductor manufacturing machine vision

### DIRECTED PERCEPTION COMPUTER CONTROLLED PAN-TILT (PTU-46-17.5 & PTU-46-70)

For application that needs computer to control Pan-tilt, Directed Perception has the product to meet your needs.



Features:

- Payload capacity of 1.81 kg or 2.72kg
- Simple to use from any RS232/485 host computer
- Fast & accurate camera positioning at low cost
- Precise control of position, speed and acceleration
- Small form factor
- Provides on-the-fly position and speed changes
- Self calibration upon reset
- Can network multiple pan-tilts from a single host computer port
- ASCII commands for simplicity, binary commands for speed
- Flexible DC power requirement
- Power consumption can be controlled from host
- Radiation hardened
- CE compliant

Applications:

- Robotics & computer vision
- Webcams
- Security & surveillance
- Industrial automation
- Tracking
- Laser ranging
- Photography, video & special effects

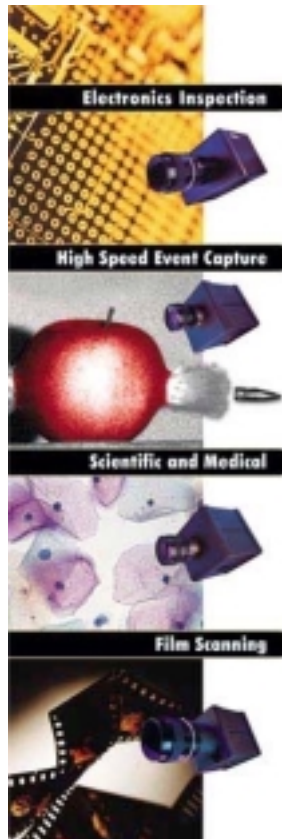
.....continue on page 4

.....from page 3.

## What's New... (continue)

### SMD HIGH RESOLUTION HIGH SPEED CCD AREA SCAN CAMERAS

*SMD* is a camera manufacturer specialises in high resolution, high speed CCD area scan camera. Located in Colorado Spring, USA, some of their key product models are listed below.



- *SMD-1M30P*: 1Kx1K pixel, 12bit, single output, 30 f/s
- *SMD-1M60*: 1Kx1K pixel, 12 bit, 4 outputs, 30 f/s or 60 f/s
- *SMD-4M4*: 2Kx2K pixel, 12 bit, 1 output, 4 f/s
- *SMD-4M15*: 2Kx2K pixel, 12 bit, 4 output, 15 f/s
- *SMD-6M3P*: 3Kx2K pixel, 12 bit, 1 output, 3 f/s
- *SMD-BT25*: 658x498 pixel, 12 bit, 1 output, 25 f/s, Backside Thinned
- *SMD-64K1M*: 240x240 pixel, 12 bit, 4 output, 1 million f/s
- *SMD-1M30PC*: 1Kx1K pixel, 12 bit, 1 output, colour, 30 f/s
- *SMD-6M3PC*: 3Kx2K pixel, 12 bit, 1 output, Bayer colour filter, 3 f/s

#### Application:

- Microscopy, spectroscopy, semi-inspection
- Medical
- PC board, LCD and Semiconductor inspection
- Ballistic

### VISION COMPONENTS SMART VIDEO CAMERAS

*Vision Components* manufactures intelligent CCD cameras for industrial image processing. In addition to the CCD image sensor, the cameras also include all functions of a conventional image processing system, such as frame grabber, video memory, processor, etc., in a small package. A PC is no longer required.

#### Models:

- *VC-13*: 1/3", 500x582pixel, 2MB RAM, CCIR, Signalprocessor ADSP 2181 , 32-160 MIPS
- *VC-11*: 1/3", 740x580 pixels B/W, 2MB RAM, CCIR, Signalprocessor ADSP 2181 , 32-160 MIPS
- *VC-51*: 1/3", 740x580 pixels B/W, 8 MB RAM, CCIR, Signalprocessor ADSP 2181 , 40-200 MIPS
- *VC-38*: 1/3", Progressive Scan, 640x480 pixels, 30Hz, 8 MB RAM, VGA non-interlace, Signalprocessor ADSP 2183, 50 Mhz
- *VC-21*: 1/3", 740x580 pixels B/W, 2MB RAM, SVGA, Signalprocessor ADSP 2181 , 32-160 MIPS
- *VC-61*: 1/3", 740x580 pixels B/W, 8MB RAM, SVGA, Signalprocessor ADSP 2181 , 40-200 MIPS
- *VC-61/C*: 1/3", 740x580 pixels, color, 8MB RAM, SVGA, Signalprocessor ADSP 2181 , 40-200 MIPS
- *VC-65*: 1/2" Progressive Scan, 782x582 Pixels, 8MB RAM, SVGA, Signalprocessor ADSP 2181 , 40-200 MIPS
- *VC-65/C*: 1/2" Progressive Scan, 782x582 Pixels, color, 8MB RAM, SVGA, Signalprocessor ADSP 2181 , 40-200 MIPS
- *VC-67*: 2/3" Progressive Scan, 1280x1024 Pixels, 8MB RAM, SVGA, Signalprocessor ADSP 2181 , 40-200 MIPS

#### Models:

- *SMD-1M15*: 1Kx1K pixel, 12 bit, 1 output, 15 f/s

## Product Range

<u>Lens</u>	<u>Camera</u>	<u>Lighting</u>	<u>Frame Grabber</u>	<u>Analysis Software</u>	<u>Pan-Tilt</u>
- Optem / US	- Dalsa / Canada	- Illumination	- Epix / US	- IO Industry / Canada	Directed
- Avernia / Japan	- JAI / Denmark	Technologies / US	- Bitflow / US	- Optimas / US	Perception / US
	- Pulnix / US		- Coreco Imaging / US	- XCaliper / US	
			- Mutech / US	- Halcon / Germany	
			- Imagenation / US	- Sherlock / US	

Note : If you need more information on Ultravision's products, please call us or visit our homepage at [www.ultravision.com.sg](http://www.ultravision.com.sg).