

About...

D³ Technology™



D³™

TECHNOLOGY

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EURESYS™
Excellence in vision

D³ Technology™*

Do you remember the first time you listened to a Compact Disc? The clarity, purity and transparency of the CD sound combined with an unprecedented ease of use immediately made this new technology the medium of choice for collecting and listening to music.

Today, you can experience the same quality revolution with the new Euresys Domino boards with even more advantages...

In fact, these innovative frame grabbers bring you all the quality of the digital technology benefiting from a proven analog environment: low-cost, reliable cabling and connections, smallest cameras, low power ...

- **Fully digital signal processing for analog image acquisition**

D³ Technology* performs all the following functions in the digital domain:

- Black level restoration
- Sampling clock generation
- Gain, offset control
- Color sub-carrier removal
- Control over horizontal and vertical pixel counts
- Synchronization recovery: vertical and horizontal
- Low-pass filtering
- Color control

- **Inherent extra-low jitter**

- **Absolute digital stability without the need for pixel clock**

- **Absolute parametric stability**

- **Synchronization schemes supported:**

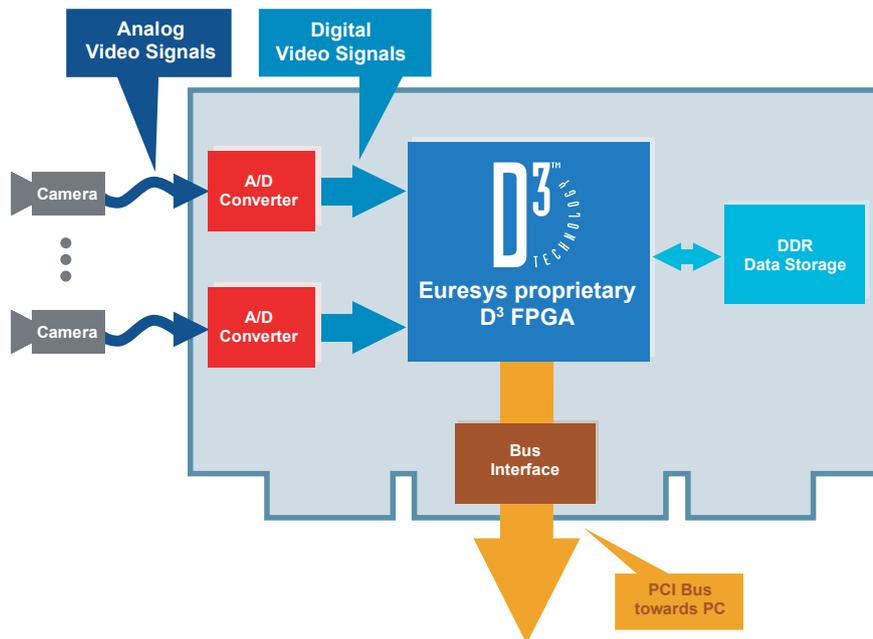
- Analog (composite sync in video)
- Master (frame grabber generated syncs)
- Digital (external syncs provided to frame grabber)

- **Excellent performance reproducibility**



D³ Technology™*

Digital Domain Decoding



The new Euresys Domino series of analog frame grabbers are based on a proprietary patented technology called D³ (pronounced D-Cube). D³ stands for **Digital Domain Decoding**. This innovative technology is applicable to all analog cameras and brings the analog acquisition to its highest quality level.

In classical analog frame grabbers, complex analog circuits (such as filters and phase-locked loops) using analog components are used to extract the horizontal, vertical and pixel synchronization information from the composite video signals being acquired. The analog components used are imperfect by nature. Such circuits often require calibration because of the variability of their characteristics. In addition, their performance may degrade with time or temperature.

In the new Euresys Domino frame grabbers implementing D³ Technology*, **the input video signal is immediately digitized with a very high accuracy and a high frequency**. Analog conditioning of the signal is reduced to a minimum and all signal processing tasks traditionally performed by analog circuits are now carried out in the digital domain. This includes digital signal recovery tasks such as the detection of the black level, the horizontal and vertical phase determination and the generation of the sampling clock. The D³ engine also implements selectable low-pass filters, optional color sub-carrier removal, high dynamic gain and offset control and sampling of the signal to any programmable resolution.

The All-Digital Approach Has Obvious Advantages

- **The noise in the image is significantly reduced** thanks to the immediate digitizing of the signal. A perfect digital image is provided.
- More importantly, **high-quality, jitter-free images** can now be acquired from composite video signals, without the need for additional synchronization signals or a pixel clock, thus drastically simplifying the cabling and increasing the reliability of industrial applications.
- Similarly, video signals degraded by noise interference (such as found on factory floors) can now be acquired with **higher robustness and accuracy**.
- New highly-integrated field-programmable components allow for an efficient implementation of D³ Technology*, leading to compact, flexible and cost-effective frame grabbers.

DOMINO Melody™, DOMINO Harmony™ and DOMINO Symphony™

The Domino Melody, Harmony and Symphony are the members of the Domino series using the D³ Technology*. They are compatible with industrial analog cameras, be they including single-tap or RGB. They support multiple speed and mega-pixel progressive-scan video signals, asynchronous reset of the camera with external triggering and exposure and light strobe control.



The **Domino Melody** is an entry-level card that supports one monochrome camera.

- One single-tap analog camera
- Support of multiple-speed and mega-pixel cameras
- 10-bit 40 MHz A/D converter
- 16-Mbyte on-board memory
- PCI bus 32 bits, 33 MHz, 3V or 5V signaling
- One trigger and one strobe I/O per camera
- Two digital TTL I/O lines for general purpose control
- Low Profile form factor available



The **Domino Harmony** is a two-camera frame grabber.

- One or two single-tap monochrome analog cameras
- Support of multiple-speed and mega-pixel cameras
- One RGB camera
- 10-bit 40 MHz A/D converters
- 32-Mbyte on-board memory
- Two DMA channels
- PCI bus 64 bits, 66 MHz, 3V or 5V signaling
- One trigger and one strobe I/O per camera
- Four digital TTL I/O lines for general purpose control



The **Domino Symphony** is a four-camera frame grabber.

- Four single-tap cameras
- Support of multiple-speed and mega-pixel cameras
- 10-bit 65 MHz A/D converters
- 64-Mbyte on-board memory
- Four DMA channels
- PCI bus 64 bits, 66 MHz, 3V or 5V signaling
- Rich set of I/O lines including:
 - One trigger and one strobe I/O per camera
 - Four digital TTL I/O lines for general purpose control
- PCI Express form factor available

About D³ Technology™*

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