

# TRANSFORM A



## Digital display controller for easy video and data integration



TRANSFORM A is the most flexible and powerful display wall controller available today. Barco's unparalleled OmniScaler technology offers easy, built-in integration of digital and analog video and data sources and allows users to place windows of any size anywhere on the display wall, without any compromises on quality.

TRANSFORM A has a scalable architecture covering the full range of control room applications, from entry-level versions applying just one TRANSFORM A PROCESSOR up to configurations with multiple TRANSFORM A OMNIBUS expansion units.

**BARCO**

Visibly yours



### Maximum flexibility and scalability

- Supported operating systems: Windows 2000/XP, X Window System
- Output resolution up to WUXGA
- Virtually unlimited number of display channels and input sources
- Up to 68 video/34 RGB sources per display channel
- Up to 68 video/34 RGB windows freely movable on the entire display wall

### Superb video and RGB integration

- Analog, digital and networked streaming sources
- Full range scaling capability, from finger print size to full wall size
- Direct video/RGB access and control
- Independent color depth selection of video, RGB, and graphic windows
- Uncompromising digital data processing
- Genlock synchronization of graphics and video data for a perfectly smooth motion display

### Power, bandwidth, future-proof

- Perfect synergy of highest graphic and video performance combined with maximum processing power in a modular architecture
- TRANSFORM A PROCESSOR is the high-performance processing core of the system, built on the latest easily upgradeable standard PC technology
- TRANSFORM A OMNIBUS with dedicated Switch Fabric and intelligent high-bandwidth backplane provides the optimized resources needed for graphic and video data integration
- Redundant, hot-swappable critical components for high overall system reliability

### System solution

- Perfectly integrated with Barco's APOLLO and OSIRIS wall management Software



TRANSFORM A12 front view



# Next generation controller for easy video and data integration

## TransForm A system overview

### Processing power plus multimedia speedy

- An open architecture and the extensive use of industry standards providing ultimate scalability
- Flexible and economical support for any system size and any input demand
- Future-proof investment thanks to upgradable PROCESSOR/OMNIBUS approach, starting from PROCESSOR-only systems up to multi-OMNIBUS configurations for virtually any system size

### TransForm A Processor

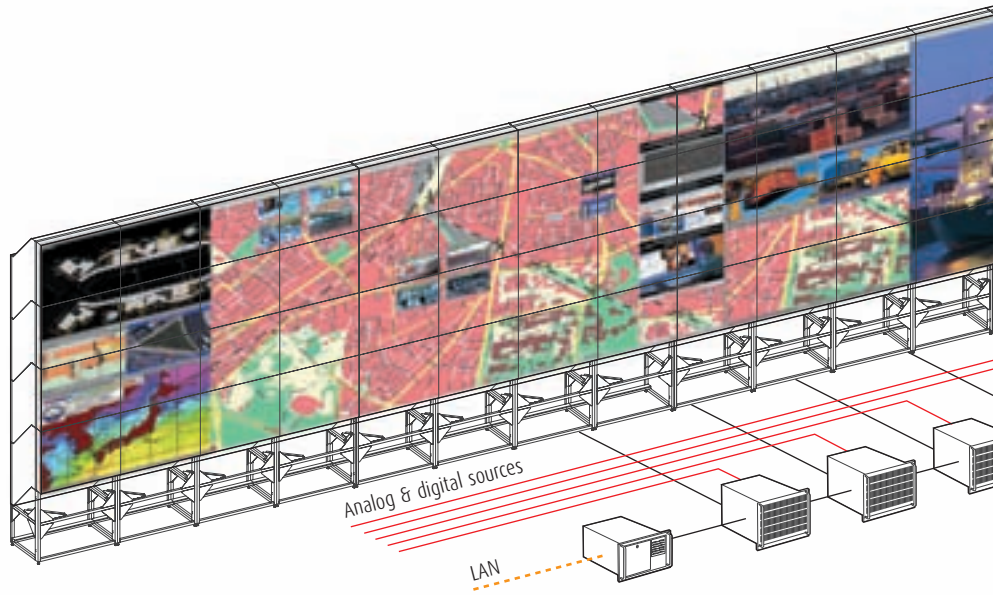
- State-of-the-art Core™ 2 Duo or dual Xeon® processing power combined with the integration flexibility of a standard PCI bus based PC
- Extensively evaluated PC components combined with redundancy options guaranteeing optimal reliability and performance

### TransForm A OmniBus

- TRANSFORM A OMNIBUS forms the backbone of the graphic and video subsystem
- Designed to integrate and display all kinds of data sources
- Quality of Service (QoS) by separating graphic data and network traffic from bandwidth-demanding input data
- Switch Fabric and PCI 64/66 based with up to 6.4 GB/s of bandwidth capacity for huge systems
- Non-proprietary, standard PCI 64/66 expansion card interface ensures compatibility

## TransForm A configuration types

TRANSFORM A is flexibly configurable according to the requirements of the application. The entry level system TRANSFORM A4/AX6, with all input and output cards inserted into the TRANSFORM A PROCESSOR, can easily be expanded to either a TRANSFORM A12 or TRANSFORM A18 system integrating up to five OMNIBUS A12 or OMNIBUS A18 devices. Typically, adding inputs or outputs to a system merely means adding an input card or an output card and possibly an OMNIBUS to the system. TRANSFORM A covers the complete range of today's display wall controller requirements and scales perfectly with the growing demands in a quickly evolving world.



### Best-in-class connectivity for any display size

The rich set of configurable TRANSFORM A input cards provides dedicated input capabilities for the widest range of source types to be found in typical control room scenarios. Managed by the TRANSFORM A driver level software, multiple TRANSFORM A output cards on the matrix of display devices generate one giant desktop for all standard user applications, and OMNISCALER cards scale, combine and display all sources in true digital quality on the display devices.

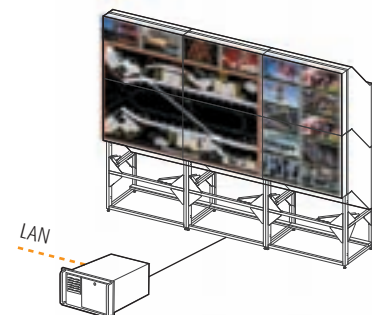
### Input cards

The QUAD ANALOG VIDEO CARD and the QUAD SDI VIDEO CARD fulfill the demand for analog and digital standard definition video types, whereas the DUAL RGB INPUT CARD connects economically to all types of computers with an analog output.

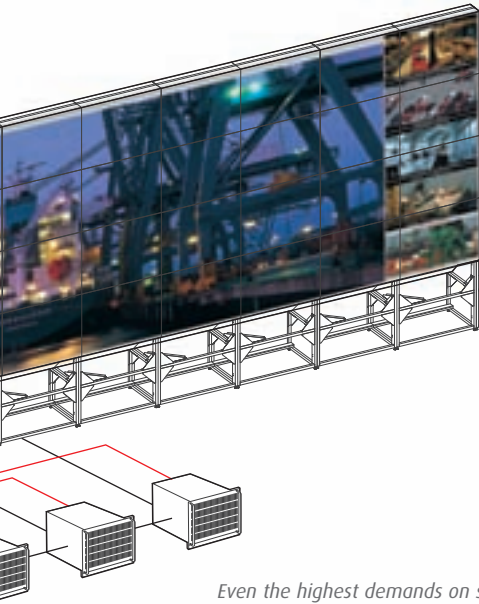
The DUAL DVI INPUT CARD is the all-rounder that covers standard analog video and computer signals and distinguishes itself with the support for High Definition and DVI signal sources. Characterized by the widest encoder support and a fully digital processing path the STREAMING VIDEO CARD opens the gate to all types of networked streaming sources.

### OmniScaler technology

TRANSFORM A distinguishes itself from other display wall controllers by the consequent realization of the all-digital concept. Quality reducing analog paths and matrix switchers inside the system are kept out by design. The signals are immediately digitized when entering the system and subsequently digitally processed in the OMNISCALER. Unlike other controllers the OMNISCALER features individual scaling factors for every single data source, even if there are many on one channel. This results in superior signal quality for all windows on the display wall.



Also for small walls, particularly with a given amount of video and RGB sources, TRANSFORM A can provide a cost-efficient entry level solution. TRANSFORM A also features built-in extendibility in size, sources and power.



Even the highest demands on size and inputs can be easily fulfilled with the flexible and scalable TRANSFORM A architecture. Extending the system is as simple as adding an OMNIBUS and a few PCI bus TRANSFORM A expansion cards.

### Output cards

The 4-channel UGX GRAPHIC CARD is able to drive all types of digital and analog display devices with native resolution up to WUXGA that are used to build tiled display walls.

As the perfect companion to the graphic card, the OMNISCALER offers the highest degree of quality and flexibility for video data insertion on the display wall:

- Digital and analog video and RGB/DVI windows can be placed anywhere on the display wall
- Multiple different scaling factors on one module and on the whole wall are processed naturally without any quality loss, at any window size
- Scaling factors range from fingerprint size up to full display wall size.

### Operating systems

With Windows® 2000/XP and X Window System TRANSFORM A has native support for the major existing operating systems. Together with the RGB input capability for integrating workstations running other operating systems, almost every integration requirement can be met.

#### Windows 2000/XP

- The display is operated as one giant Windows 2000/XP desktop
- Transparent, unrestricted use of the entire wall for standard Windows 2000/XP applications
- All applications can be operated by the local keyboard or by any other Windows 2000/XP computer (with optional APOLLO software package)
- Powerful Windows 2000/XP drivers tuned and optimized for large multiscreen display walls

Transform A	Input capability	Outputs	Application
• Transform A4/AX6	standard	1-16/1-24	small size, few inputs
• Transform A12	very high	up to 176 displays	medium size, fast HD inputs
• Transform A18	high	up to 176 displays	large size, moderate inputs



TRANSFORM A18 rear view

### X Window System

- Non-Emulation, native X Server
- Transparent, unrestricted use of the entire wall for standard X clients
- Simultaneous multiple color modes for X applications and input source windows
- Powerful extensions available like multicursor, blinking, ...
- For huge wall sizes, Barco's unique distributed X Server technology provides multiplied rendering power
- Support for multiple logical screens for subdividing the whole display wall into logically separated areas

### Wall management software

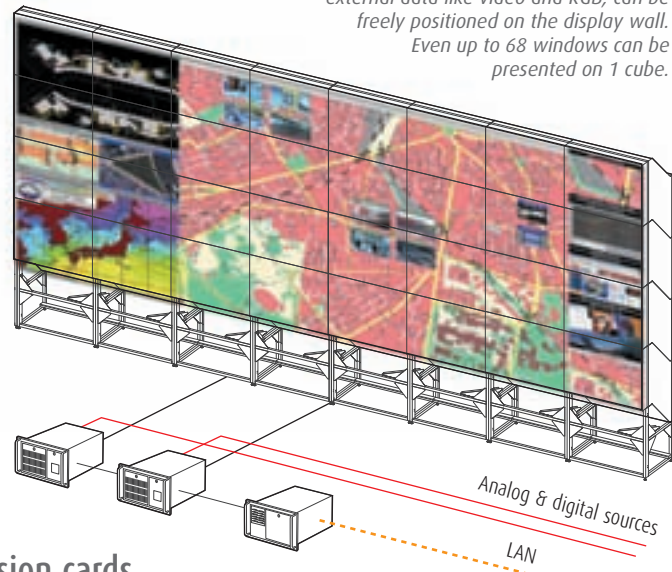
Barco's wall management software enables operators to control and manage the display wall layout and content in a user-friendly way, both for remote and local applications. Depending on the operating system two versions exist: APOLLO is for Windows 2000/XP systems whereas OSIRIS is for X Windows.

## Reliability and redundancy

For uninterrupted system operation TRANSFORM A provides several redundancy options:

- Redundant hot-swap power supplies
- Redundant hot-swap RAID Level 1 or RAID Level 5 harddisk
- Redundant Ethernet adapter
- The redundancy components are continuously monitored; audio and video alarms are triggered in case of failure

All windows, including those showing external data like video and RGB, can be freely positioned on the display wall. Even up to 68 windows can be presented on 1 cube.



## Technical specifications Transform A expansion cards

<b>UGX Graphic Card</b>	4 channel graphic card
<ul style="list-style-type: none"> <li>• graphic processors/memory</li> <li>• resolution</li> <li>• pixel clock</li> <li>• connectors</li> </ul>	<ul style="list-style-type: none"> <li>- 4x ATI graphic accelerators, 4 x 32 MB SDRAM</li> <li>- up to 1920x1200 at 8/15/16/32 bpp (digital &amp; analog)</li> <li>- 165 MHz digital, 350 MHz analog</li> <li>- 2 dual-DVI connectors with DVI-D (digital) or VGA (analog) adapter cable</li> </ul>
<b>OmniScaler</b>	2 channel multisource and multifactor scaler card
<ul style="list-style-type: none"> <li>• resolution</li> <li>• input</li> <li>• output</li> <li>• internal pixel format</li> </ul>	<ul style="list-style-type: none"> <li>- up to 1920x1200</li> <li>- dual-DVI for 2 digital channels from graphic card</li> <li>- dual-DVI for 2 digital display connections (via DVI-D adapter cable)</li> <li>- RGB555, RGB565, RGB888, YUV422</li> </ul>
<b>Dual DVI Input Card</b>	dual multistandard input card for simultaneous display of 2 sources
<ul style="list-style-type: none"> <li>• sources</li> <li>• HiRes Input Mode</li> <li>• genlock</li> <li>• internal pixel format</li> <li>• connectors</li> </ul>	<ul style="list-style-type: none"> <li>- SDTV analog PAL, NTSC, SECAM (Composite, S-Video, Component)</li> <li>- HDTV 720p, 1080i, 1080p (Component)</li> <li>- RGB analog up to 1920x1200 (up to 165 MHz pixel clock)</li> <li>- DVI up to 1920x1200 (up to 165 MHz pixel clock)</li> <li>- up to 330 MHz pixel clock (e.g. 2048x2048 pixel) in single channel mode</li> <li>- every input selectable as genlock master sync (50/60 Hz)</li> <li>- RGB555, RGB565, RGB888, YUV422</li> <li>- 1 DVI-I dual link, 1 DVI-I</li> </ul>
<b>Quad Analog Video Card</b>	quad input card for simultaneous display of 4 analog video sources
<ul style="list-style-type: none"> <li>• sources</li> <li>• internal pixel format</li> <li>• genlock</li> <li>• connectors</li> </ul>	<ul style="list-style-type: none"> <li>- PAL, NTSC, SECAM at 25 or 30 frames per second</li> <li>- YUV422</li> <li>- every input selectable as genlock master sync (50/60 Hz)</li> <li>- 4 BNC</li> </ul>
<b>Dual RGB Input Card</b>	dual input card for simultaneous display of 2 RGB sources up to SXGA and higher
<ul style="list-style-type: none"> <li>• sources</li> <li>• sync</li> <li>• internal pixel format</li> <li>• connectors</li> </ul>	<ul style="list-style-type: none"> <li>- pixel clock 20 MHz - 135 MHz per input, line frequency 15 kHz - 115 kHz</li> <li>- Hsync+Vsync, Csync, Sync on Green</li> <li>- RGB555, RGB565, RGB888</li> <li>- 2 HD15</li> </ul>
<b>Streaming Video Card</b>	universal digital streaming video decoder for simultaneous display of 4 video streams
<ul style="list-style-type: none"> <li>• protocols</li> <li>• compression</li> <li>• genlock</li> <li>• connectors</li> </ul>	<ul style="list-style-type: none"> <li>- TCP, UDP, RTP, IP, IGMP</li> <li>- MPEG-2, MPEG-4, MJPEG, MxPEG, VisioWave, Transform SCN (continuously growing)</li> <li>- every input stream selectable as genlock master sync (50/60 Hz)</li> <li>- redundant RJ45 10/100 Base-T</li> </ul>
<b>Quad SDI Video Card</b>	quad input card for simultaneous display of 4 digital video sources
<ul style="list-style-type: none"> <li>• standards</li> <li>• genlock</li> <li>• connectors</li> </ul>	<ul style="list-style-type: none"> <li>- standard definition SMPTE 259-M-C 270 Mbps / 4:2:2 formats on PAL and NTSC</li> <li>- every input selectable as genlock master sync (50/60 Hz)</li> <li>- 4 BNC</li> </ul>

## Technical specifications Transform A

Transform A Processor	Processor A4	Processor AX6
	<ul style="list-style-type: none"> <li>- Intel Core™ 2 Duo 2.13 GHz</li> <li>- 1 GB main memory standard</li> <li>- extendable up to 4 GB max. (3 GB usable)</li> <li>- standard PCI bus</li> <li>- 133 MB/s</li> <li>- SATA disk drive 250 GB (RAID-1/RAID-5 option)</li> <li>- 10/100/1000 MBit LAN (redundant option)</li> <li>- redundant, hot-swap power supply (option)</li> <li>- host for up to 4 OmniBus units</li> <li>- 4 slots</li> </ul>	<ul style="list-style-type: none"> <li>- Quad-core Intel Xeon® CPU, 2.8 GHz, 1 or 2 CPU's</li> <li>- 2 GB ECC main memory standard</li> <li>- extendable up to 4 GB (3 GB usable)</li> <li>- standard PCI-X bus</li> <li>- 533 MB/s</li> <li>- SATA disk drive 250 GB (RAID-1/RAID-5 option)</li> <li>- dual 10/100/1000 MBit onboard LAN (redundant)</li> <li>- redundant, hot-swap power supply</li> <li>- host for up to 5 OmniBus units</li> <li>- 6 slots</li> </ul>

Transform A OmniBus	OmniBus A12	OmniBus A18
	<ul style="list-style-type: none"> <li>- Switch Fabric backplane</li> <li>- 1.6 GB/s</li> <li>- 12 slots</li> <li>- redundant hot-swap power supply</li> </ul>	<ul style="list-style-type: none"> <li>- enhanced PCI 64/66 backplane</li> <li>- 533 MB/s</li> <li>- 18 slots</li> <li>- redundant hot-swap power supply (option)</li> </ul>

Dimensions	Processor A4	Processor AX6	OmniBus A12	OmniBus A18
<ul style="list-style-type: none"> <li>• 19" industrial case, height in rack unit</li> <li>• width case</li> <li>• width with fixation</li> <li>• depth case</li> <li>• depth with handles</li> <li>• height</li> <li>• height with rubber feet</li> </ul>	4U 440 mm   17.32 in. 482 mm   18.98 in. 516 mm   20.32 in. 566 mm   22.28 in. 177 mm   6.97 in. 183 mm   7.20 in.	4U 440 mm   17.32 in. 482 mm   18.98 in. 566 mm   22.28 in. 616 mm   24.25 in. 177 mm   6.97 in. 183 mm   7.20 in.	4U 440 mm   17.32 in. 482 mm   18.98 in. 450 mm   17.72 in. 500 mm   19.69 in. 177 mm   6.97 in. 183 mm   7.20 in.	6U 449 mm   17.68 in. 482 mm   18.98 in. 420 mm   16.54 in. 461 mm   18.15 in. 267 mm   10.51 in. 270 mm   10.63 in.

Weight	Processor A4	Processor AX6	OmniBus A12	OmniBus A18
<ul style="list-style-type: none"> <li>• standard, no cards (approx.)</li> <li>• redundant PSU, no cards (approx.)</li> </ul>	18.0 kg   39.7 lbs 20.5 kg   45.2 lbs	- 23.3 kg   49.2 lbs	- 18.2 kg   40.1 lbs	19.8 kg   43.7 lbs 21.8 kg   48.1 lbs

Mains	Processor A4	Processor AX6	OmniBus A12	OmniBus A18
<ul style="list-style-type: none"> <li>• power supply</li> <li>• power consumption standard</li> <li>• power consumption redundant</li> <li>• Heat dissipation</li> </ul>	100-240 V, 50/60 Hz 400 W 400 W 1400 BTU/h	- 650 W 2275 BTU/h	- 600 W 2100 BTU/h	600 W 600 W 2100 BTU/h

Operating conditions
0 – 40°C   32 – 104°F at max. 80% humidity (non condensing)


 for updated product information, please visit  
[www.barcocontrolrooms.com/en/products](http://www.barcocontrolrooms.com/en/products)

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