MiNiCON

Embedded Vision Control System

Embedded Computing System Ensures High Stability
Switch Fabric Architecture with up to 150 Gbps Bandwidth
Real Time Program Preview/Video Playback
Real Time Video Processing at 60 fps
iPad ® Control

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Smarter. Greener. Together.

The Most Powerful and Reliable
Display Control System

The MiNiCON is a real-time, lossless and fully embedded display wall controller for arrays of projectors, video wall cubes or flat panel displays. Employing cutting-edge embedded computing technology and a switch fabric architecture, the MiNiCON offers up to 150 Gbps of bandwidth, which is capable of supporting multiple high resolution RGB/Video signals and monitors with 24 bits per pixel at a solid 60 frames per second.

The MiNiCON is an embedded computing system rather than a conventional controller, offering higher performance, robustness, security and lower power consumption compared to traditional IPC-based display wall processors. The processor guarantees high quality and real-time display of all inputs under all conditions without dropped frames.

Advanced Processing Architecture

MiNiCON has an intelligent high-bandwidth (150 Gbps) backplane architecture, creating a true non-blocking communication infrastructure for high demanding applications. This architecture provides real time, high quality video processing without dropped frames. This Embedded system ensures high reliability and low power consumption. The MiNiCON is packaged in a rack-mount enclosure with replaceable air filters.

High Reliability and Security

MiNiCON features high accuracy internal/external frame synchronization and dual redundant power supplies for uninterrupted operation. The combination of the fully embedded design, redundant power supplies and the absence of Windows OS allows for 24/7 operation and provides high reliability and security in the most challenging environment.

Front Panel Display

Featuring intelligent sensors and a front panel OLED display, the MiNiCON is able to monitor and display temperature, fan speed, voltage, video card and IP information in real time and react to failures, ensuring safe and reliable operation.

Multiple Input Options, Perfect Video Quality and Flexible Control

The MiNiCON can display up to 30 screens with a maximum of 48 graphics/ 56 video inputs. Images can be displayed in any size, anywhere on the display wall. Supported input signals including RGB/DVI, 3G-SDI, analog video and HD video. The Dual DVI-I input card supports input signals up to 1920 x 1200 and component video progressive-scan HD inputs up to 1080p @60 fps. The Quad SD video input card supports standard definition composite and S-Video inputs. The Dual Channel SDI input card can handle two channels 3G-SDI signal inputs with high speed transmission speed up to 2.97Gbps. The Dual Channel HD Video card can handle two channel Full- HD video inputs via HDMI or YPbPr interface. HDMI interface supports HDCP standard. With frame synchronization, motion-adaptive de-interlacing and high-accuracy image scaling, perfect video quality is ensured and screen tearing is eliminated. Display alternatives are completely flexible. Background images, overlapping and picture-in-picture windows can be accomplished without any performance degradation.

Front Panel
Display

IP Address
IP 1: 192.168.1.23
IP 2: 192.168.1.65

Slot 1 : RGB
1: 1024x768,60Hz,RGB
2: 1920x1200,60Hz,DVI

Fan Speed
1: 3600 rpm 2:3450 rpm 3:3500 rpm

Slot 10:SD Video (1/2)
1: 720x576, 50Hz, CVBS
2: 720x576, 50Hz, S-Video

Error(1/3)
Slot 1 : Boot Failed
Slot 10 : High Temperature

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MiNiCON
Software Suite

MiNiCON Manager, a client-server based system, allows operators to manage large amounts of sources on video wall displays. The server is directly integrated into the MiNiCON and the client can be installed on PCs running Windows XP/Vista/7.

The client and server communicate using the MiNiCON protocol over a TCP/IP connection. The MiNiCON Manager is a highly intuitive, drag-and-drop interface that allows you to easily control and manage display walls with the way you want. All video sources can be displayed in real time in any size and at any position on the display wall with different static and auto layouts saved and recalled as required. Regardless of video wall size and number of windows, these layouts can be loaded in less than 1 second. The MiNiCON also supports a real-time preview of up to 10 video sources and allows multiple users to control the same display wall simultaneously.

In addition to dynamic window sizing and positioning, smooth zooming within images, custom borders, titling and scheduled layouts and backgrounds, the MiNiCON also supports iPad control over Wi-Fi networks.

MiNiCON
Cards

The MiNiCON can display up to 30 screens with a maximum of 48 graphics/ 56 video inputs. Images can be displayed in any size and any position. Supported inputs include RGB/DVI, 3G-SDI, analog video and HD video.

SD Video Input Card (SD Video / S-Video Input)

➡ Supports up to 4 CVBS/S-Video inputs PAL/NTSC formats
➡ Automatic signal format detection
➡ Motion-adaptive de-interlacing
➡ High quality digital image scaling with multi-tap filtering

➡ 4 independent video decoders with 3D comb filter
➡ Supports 4 scalable windows per channel

Display Output Card (DVI-I Output)

➡ Dual DVI-I outputs
➡ Outputs digital (DVI) and analog (RGB) signals
➡ Supports resolutions up to 1920x1200
➡ Displays up to 64 video sources per channel
➡ Supports custom window borders and titles

➡ High accuracy internal/external frame synchronization
➡ High quality digital image scaling with multi-tap filter

RGB Input Card (DVI-I Input)

➡ Dual DVI-I Inputs
➡ Captures digital (DVI) and analog (RGB) signals
➡ Supports resolutions up to 1920x1200
➡ Automatic signal format detection for plug-and-play

➡ Supports 4 scalable windows per channel
➡ High quality digital image scaling with multi-tap filter

MiNiCON
Cards

The MiNiCON can display up to 30 screens with a maximum of 48 graphics/ 56 video inputs. Images can be displayed in any size and any position. Supported inputs include RGB/DVI, 3G-SDI, analog video and HD video.

HD Input Card (DVI-I Video Input)

➡ Dual HD Inputs
➡ Supports resolutions up to 1920x1080p
➡ High quality image scaling with adaptive multi tap filter
➡ Motion adaptive de-interlacing
➡ Supports HDCP

3G-SDI Input Card (3G-SDI Input)

➡ Dual 3G-SDI inputs
➡ Supports resolution up to 1920x1080p
➡ High quality image scaling with adaptive multi tap filter
➡ Motion adaptive de-interlacing

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Flexible Configuration and Control
Using switch fabric architecture, the MiNiCON offers 15 slots, each of which can support any type of input or output video card. The MiNiCON allows complete remote control via Ethernet or RS-232. Users can easily control the MiNiCON from their tablets.

Multi-user Management
The MiNiCON allows 16 different users to manage and control the same video wall simultaneously. Video wall management is further simplified and secured by user permission levels.

Easy Peripheral Control
Peripherals such as matrix switchers and optical engines can be easily controlled through the MiNiCON with no need for complex peripheral settings.

Diverse Input Options
The MiNiCON supports a variety of input types in any combination, including dual channel RGB/DVI inputs, quad channel composite video inputs, dual channel 3G-SDI inputs, dual channel HD video inputs and IP link modules.

High Speed Video Input Detection
The MiNiCON can automatically detect and recognize any video input within 3 seconds and display them on the video wall display within 1 second.

Multiple Signal Connection Modes
The MiNiCON offers 4 signal connection modes to fit different application needs and requirements: direct to cards, matrix to cards, matrix to display wall and direct to display wall.

Window Titles and Borders
The MiNiCON supports custom window borders and tiling, allowing for more effective management of the video wall.

Seamless Switching between Sources
The MiNiCON provides seamless, glitch-free switching between one source and the other, which is ideal when multiple sources are routed through a matrix.

HDCP Support
The MiNiCON is fully HDCP compliant, allowing HDCP-encrypted content to be played on HDCP compliant display devices.

Video Source Duplication
The MiNiCON allows users to duplicate any video source to create 4 identical windows, all of which can be freely sized and placed on the video wall.

Up to 64 Scalable Windows per Display Unit
With the MiNiCON, each display unit can display up to 64 video sources as fully scalable windows in any size and at any position.

Custom Video Source Playlist
The MiNiCON can automatically play a list of video sources at your set interval in any designated window.

Layout Management
The MiNiCON allows users to save up to 1000 layouts and 29 embedded layouts. Multiple layouts can be arranged and combined to create an auto layout, which plays automatically at your set interval and in your preferred order. Embedded layouts operate independently from the MiNiCON Manager software and are automatically loaded after a reboot.

API Interface
MiNiCON protocol and APIs are open and available to third-party developers for custom applications and complete control

Multi User Management

HDCP Support

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API Interface

Diverse Inputs Management

Scrolling Subtitles
Users can customize the content and display effect of the subtitles and display up to 4 scrolling subtitles simultaneously.

Downloadable Backgrounds
A maximum of 4 background images are supported for each display unit. Images can be displayed across the entire display wall or on a single display unit.

Edge Overlap Support
The MiNiCON allows users to easily adjust the overlap width and position between edge blending projectors to create a seamless image.

Bezel Compensation
The MiNiCON supports bezel compensation for each display unit, enabling users to easily correct geometric distortion resulting from video wall tiling.

High Quality De-interlacing and Scaling
With motion adaptive de-interlacing and high quality image scaling, screen tearing is eliminated and perfect picture quality is ensured.

1920x1200@60Hz for Input/Output
The MiNiCON supports both analog and digital input/output resolutions up to 1920x1200 at 60 frames per second.

High Reliability
The fully embedded MiNiCON system with redundant, hot swappable power supplies provides high reliability and stability for any 24/7 application.

Effective Video Source Management
The MiNiCON supports grouping of video sources for effective management.

Grid
Gridlines can be added to the display wall for more effective and accurate layout.

Window Scaling
Users can lock the window aspect ratio while scaling and easily restore the original window size.

Standby Mode
The MiNiCON features a standby mode which makes power saving easy and efficient.

Multi Language Support
The MiNiCON is available in the following language versions: English, Simplified Chinese, Traditional Chinese, Japanese, Korean and Russian

Software Versions
The MiNiCON offers three software editions – Basic, Professional and Ultimate – to satisfy different customer requirements.
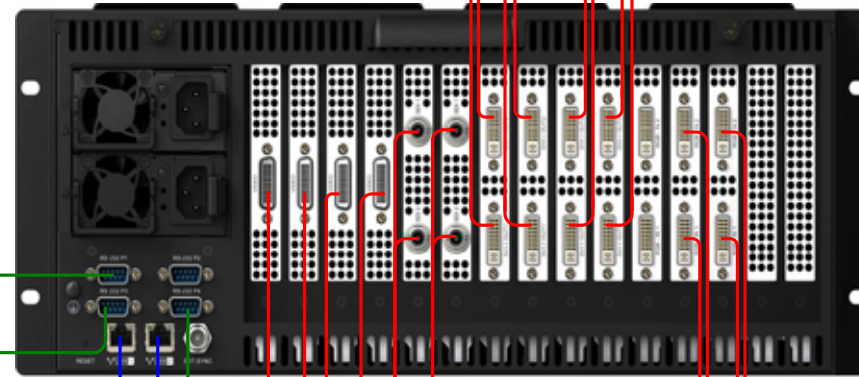
Real Time Preview and Playback
The user-friendly GUI enables easy control and management of all display windows and allows users to preview all input sources before displaying them on the video wall. MiNiCON supports a preview of up to 10 video sources and playback of all opened windows, all at 15 fps
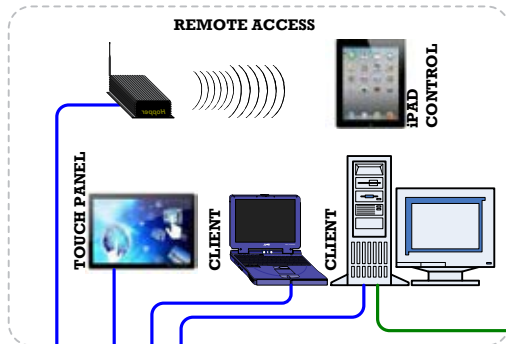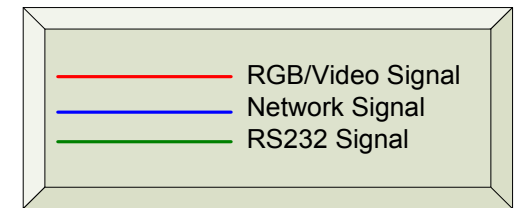
IPSS Support

Real Time Preview/ Playback

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Real Time Preview/ Playback

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System Architecture

DISPLAY WALL

Tramnet Amsterdam
situatie 2010

DELTA MiNiCON

REMOTE ACCESS

iPAD CONTROL

TOUCH PANEL

CLIENT

CLIENT

NETWORK

HD VIDEO SOURCE

SDI VIDEO SOURCE

3G-SDI SOURCE

PC SOURCE

	RGB/Video Signal
	Network Signal
	RS232 Signal
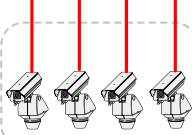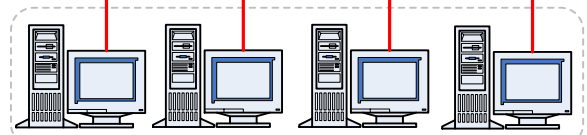
Specifications

Chassis

Dimensions(HxWxD)	177 x 483 x 470 mm (7.0 x 19.0 x 18.5")
Weight	15.9 Kg (35 lbs)
Front Panel Display	OLED panel with 256x64 pixels
Front Panel LED	Power 1x LED, Green Fan 1x LED, Green/Red Temp 1x LED, Green/Red Status 1x LED, Green/Red
System Architecture	Non-blocking Switch Fabric with 150 Gbps bandwidth
Slot	15 slots (10 Gbps per slot, non-blocking bandwidth)
Communication	4 x RS-232 Dsub9 2 x Ethernet 1000M RJ-45
Touch Panel Support	IP/RS-232 control protocols
External Frame Sync	1 x BNC-F

Dual RGB/DVI Input Card (Optional)

Inputs	Up to 28 inputs
Number / Type	2 x analog RGB/ DVI per card
Format	Analog RGB with any sync type (composite, separate, sync on green) Digital DVI
Clock Rate	Up to 165MHz
Resolution	800x600 to 1920x1200
Color	16/32 bits per pixel
Connector	2 x DVI-I

Dual HD Video Input Card (Optional)

Inputs	Up to 28 inputs
Number / Type	2 x YPbPr/HDMI per card
Format	576i@50Hz, 480i@60Hz, 576p@50Hz, 480p@60Hz, 1280x720P/60 and 59.94 Hz, 1920x1080i/50 and 50.94 Hz, 1920x1080PsF/24 Hz, 1920x1080P/23.98, 24, 25, 50, 59.94, 60 Hz
HDCP	HDCP Support
Connector	2 x DVI-I

Dual DVI-I Output Card (Optional)

Outputs	Max 30 analog RGB/digital DVI outputs
Number / Type	2 x analog RGB/digital DVI per card
Clock Rate	Up to 165MHz
Resolution	800x600 to 1920x1200
Frame Rate	60Hz
Color	16/32 bits per pixel
Connector	2 x DVI-I

Operating Range

Operating Temperature	0°C - 40°C (32°F - 104°F)
Non-operating Temperature	-10°C - 66°C (14°F - 151°F)
Humidity	10-90%, non-condensing
Altitude	3,048 m (10,000 feet)

Electrical Requirements

Power	Dual redundant power supplies
Input Voltage	100-240 VAC, auto-ranging power supply
Frequency	50/60 Hz
Power Consumption	Max 650 Watts

Quad SD Video Input Card (Optional)

Inputs	Up to 56 inputs
Number / Type	4 x CVBS/S-Video per card
Format	PAL, NTSC
De-interlacing	Motion adaptive de-interlacing, 3-2 pull down
Connector	4 x composite BNC-F or S-Video

Dual 3G - SDI Video Input Card (Optional)

Inputs	Up to 28 inputs
Number / Type	2 x 3G-SDI per card
Format	576i@50Hz, 480i@60Hz, 576p@50Hz, 480p@60Hz, 1280x720P/60 and 59.94 Hz, 1920x1080i/50 and 50.94 Hz, 1920x1080PsF/24 Hz, 1920x1080P/23.98, 24, 25, 50, 59.94, 60 Hz
Interface Standard	SMPTE 292M & 424M
Connector	2 x BNC - F

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GLOBAL OFFICES

Website   **www.deltadisplays.com**
Contact Us **vw.sales@deltadisplays.com**

Europe

NETHERLANDS
Delta Electronics Europe
Zandsteen 15,2132 MZ
Hoofddorp,
The Netherlands

SLOVAKIA
Delta Electronics (Slovakia) s.r.o.
Priemyselna ulica 4600/1
018 41 Dubnica nad Vahom
Slovakia

FRANCE
Delta Electronics (France) S.A.
ZI du bois Chaland
2 15 rue des Pyrenees,
Lisses 91056 Evry Cedex

Americas

USA/PORTLAND
Delta Products Corporation
Portland Office
1600 NW Compton Drive, Suite 100
Hillsboro, OR 97006, U.S.A.

USA/FREMONT
Delta Products Corporation
Fremont Office
4405 Cushing Parkway,
Fremont, CA 94538, U.S.A.

BRAZIL
Delta Greentech (Brasil) S/A
Rua Almirante Alexandrino,
3100 - Afonso Pena
83045-210 - São Jose dos
Pinhais- PR - Brasil

Asia

TAIWAN
Delta Electronics, Inc.
186 Ruey Kuang Road,
Neihu,Taipei 11491, Taiwan

THAILAND
Delta Electronics (Thailand) PCL
909 Soi 9 Moo 4, E.P.Z.Bangpoo
Industrial Estate, Tambon Prakasa,
Amphur Muang Samutprakarn,
Samutprakarn 10280, Thailand

KOREA
Delta Electronics (Korea) Inc
1511, Byucksan Digital Valley
6-cha, Gasan-dong,
Geumcheon-gu,
Seoul, Korea 153-704

INDIA
Delta India Electronics Pvt. Ltd
Plot No 43 Sector 35, HSIIDC
Gurgaon 122001, Haryana, India

SINGAPORE
Delta Electronics Int'l (S) Pte. Ltd.
4 Kaki Bukit Ave 1, #05-05
Singapore 417939

CHINA
Delta Electronics (Shanghai) Co., Ltd.
No.182 Minyu Road,
Pudong Shanghai, P.R.C.
Post Code: 201209

QR Code

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