MGP 462

DUAL WINDOW MULTI-GRAPHIC PROCESSOR

- Combines full-motion video and RGB input sources
  - RGBHV, RGBS, RGsB
  - Component video
  - S-video & composite video
- Optional SDI input
- RGB or component video output
- 46 scaled output rates, including HDTV and SXGA+ (1400 x 1050)
- Custom picture-in-picture controls and configurations
- Graphic Still Store
- Window transition effects
- Picture-in-picture memory presets
- IP Link® Technology

High performance graphics processing for professional multi-image presentations

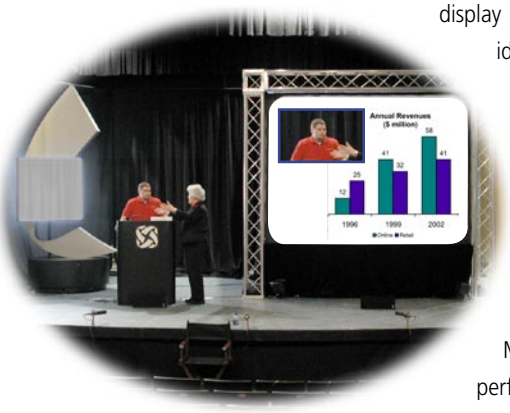
Extron® Electronics

www.extron.com

MGP 462 – Multi-Graphic Processor

High Performance Multi-Graphics Processing

The Extron **MGP 462** and **MGP 462D** Multi-Graphic Processors are powerful, high resolution graphics processors that enable the simultaneous display of multiple images. They are ideal for applications demanding critical quality graphics and video presentations including video-conferencing, conference rooms, boardrooms, command and control centers, distance learning, and event staging systems. The MGP 462 and MGP 462D combine high performance graphics scaling with flexible and customizable picture-in-picture functionality.



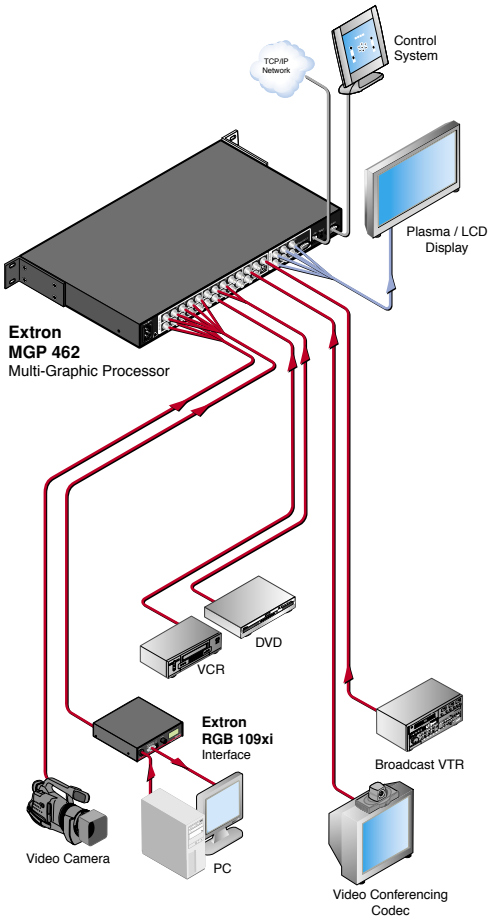
The MGP 462 enables multi-image displays for top-notch presentations

A wide range of input sources can be accommodated, from composite video to 1080p HDTV, to computer-video at up to UXGA (1600 x 1200) resolution, and SDI as an option. Inputs to the MGP 462 are scaled and placed in windows for picture-in-picture display, and then output at any of 46 available scan rates including SXGA+ computer-video and 1080p HDTV.

An advanced feature set enables custom multi-image displays, including picture-in-picture window positioning, size, zoom, priority, and image freeze. With Extron's exclusive Graphic Still Store, screen captures of the current output can be stored for use as presentation background images. Alternatively, bitmap (BMP) graphics can be uploaded from a PC via the IP Link® port, and recalled as a background. Images stored on the MGP 462 can be downloaded to a PC through IP Link for archival use. The MGP 462 also incorporates picture and window fine tuning controls for precise picture-in-picture customization. Windows can appear and disappear using elegant effects including wipes and dissolves for enhanced, professional quality multi-image presentations.

The MGP 462 features full front panel controls for comprehensive, integrator and user friendly access to functions. Remote control of the MGP 462 is available via RS-232 with Extron Simple Instruction Set (SIS™). IP Link via Ethernet enables remote management and support from any computer with a Web browser.

The MGP 462 is perfect for environments where a combination of multiple images is essential



MGP 462 – Multi-Graphic Processor

High Performance Multi-Graphics Processing

Window selection buttons
Back-lit buttons enable selection of windows for picture and window adjustments.

LCD interface
The user-friendly and easy-to-read LCD display simplifies operation and control.

Image freeze control
Any selected input for each picture-in-picture window can be frozen, enabling captured video frames to be displayed.

Picture and window adjustments
Adjustments for picture color, tint, brightness, contrast, and detail, as well as window position, size, and zoom, can be directly accessed through the front panel.

Image controls
All picture and window adjustments can be fine tuned using rotary image controls.

Back-lit input selection buttons
Input selection buttons are easily identifiable using back-lit buttons with clear overlay labels, enabling simple front panel operation.

Picture-in-picture memory presets
Custom picture-in-picture window configurations can be conveniently saved and recalled.

Menu and Next
The Menu button steps through the set-up menus, while the Next button navigates within each set-up menu.

Fully configurable inputs
The MGP 462 features four fully configurable inputs that accommodate a wide range of sources, including RGB, component video, S-video, and composite video.

Video inputs
The MGP 462 features a multi-configurable input for component video, S-video, or composite video, and dedicated inputs for S-video or composite video.

Optional SDI input
The optional SDI (Serial Digital Interface) input facilitates integration of SDI sources into analog A/V systems.

RS-232 and RS-422 control
Extron Simple Instruction Set (SIS™) is provided for RS-232 & RS-422 control via Extron's Windows®-based control program or third-party control.

High resolution input compatibility
The four fully configurable inputs accept computer-video resolutions up to UXGA (1600 x 1200) as well as video sources including 480p, 720p, 1080i, and 1080p HDTV.

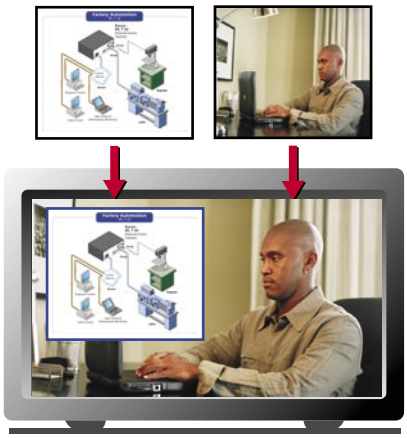
Simultaneous configurable outputs
Scaled picture-in-picture video is output as RGB or component video through configurable 15-pin HD and BNC connectors. There are 46 selectable output scan rates including SXGA+ and HDTV at up to 1080p.

IP Link®

IP Link Ethernet capability enables the MGP 462 to be managed and proactively monitored over a LAN, WAN, or the Internet.

What's Inside the MGP 462

Features



The MGP 462 delivers multi-image displays combining computer graphics and video

Each picture-in-picture window can be labeled using text overlay

Background image

Background image with two video windows

High Resolution, Multi-Image Presentations

The MGP 462 delivers multi-image displays comprising high resolution multimedia and video, including HDTV, enabling new, enhanced possibilities for high impact, professional quality A/V communications. The MGP 462 features reference quality scaling and proprietary, high resolution graphics processing for full compatibility with computer-video and HDTV sources, and optimum performance commensurate with the latest presentation displays.

Custom Picture-in-Picture Windows

The MGP 462 features picture-in-picture window configurations that are fully customizable to the requirements of any application. Each window can display any connected input source, and can be independently positioned, sized, and zoomed. Picture adjustments are also available, including color, tint, brightness, contrast, and detail. Fine tuning controls on the front panel enable precise adjustments as necessary for the needs of the presentation. In addition, colors can be selected for the picture-in-picture background and window borders.

Graphic Still Store

Graphic Still Store is a powerful, exclusive feature which captures any currently displayed output, and then stores the image in memory for use as a background. Additionally, bitmap (BMP) graphics can be uploaded to the MGP 462 via the IP Link® port, and recalled as a background. With Graphic Still Store, static images can be integrated with the two dynamic video or graphic windows for use in themed multimedia presentations. Images stored on the MGP 462 can be downloaded to a PC as BMP files for archival purposes.

Fully Configurable Inputs

The MGP 462 features four fully configurable inputs on BNC connectors that accommodate RGBHV, RGBS, RGsB, RGBcvS, component video, S-video, or composite video. Computer-video sources can include high resolution to UXGA (1600 x 1200), and HDTV up to 1080p. Additional inputs are available for component video, S-video, and composite video.

Optional SDI Input

Standard with the MGP 462D, and as an add-on option for the MGP 462, is an SDI (Serial Digital Interface) input. The SDI input enables CCIR 601 digital video sources to be integrated into A/V systems via the MGP 462.

Transition Effects

For professional quality presentations, windows can be transitioned into and out of the image. Customizable options are available, including various dissolves, wipes, or a simple cut.

Text Overlay

Each picture-in-picture window can be labeled with a text label of up to 16 characters. The text can be uploaded to the MGP 462 via RS-232 or RS-422 control, or IP Link. Custom options are available for text positioning, text color, character size, translucent or opaque background (color selectable), and text border.

Freeze Control

Any input to a picture-in-picture window can be frozen via the front panel, RS-232 or RS-422 control, or IP Link. This feature enables the MGP 462 to capture frames of video or graphics to display for extended periods of time.

Auto-Image™ Setup

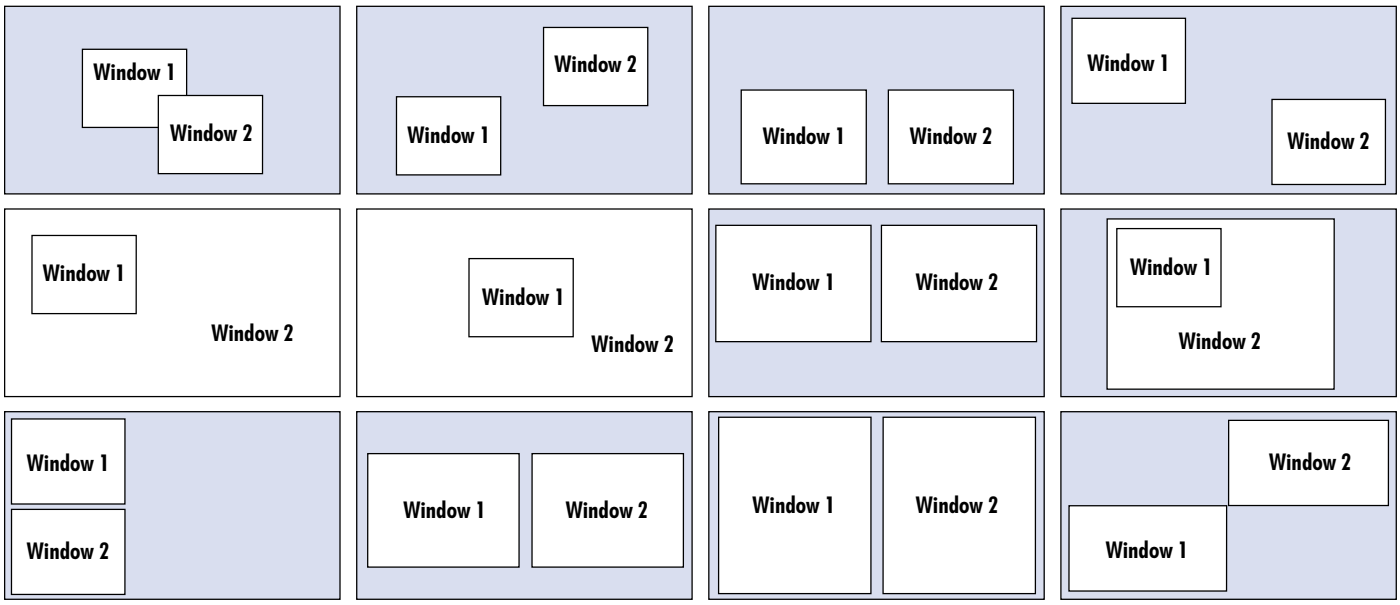
For expedited presentation set-up, the MGP 462 automatically optimizes the image to the scaled output rate. This eliminates complex and time-consuming set-up procedures.

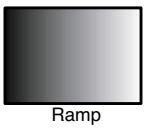
What's Inside the MGP 462

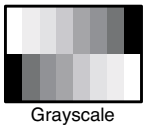
Features

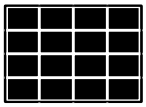
Window Configurations

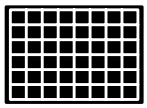
The MGP 462 includes 25 factory-loaded picture-in-picture window configurations (several illustrated below) that can be fully customized.




Ramp


Grayscale

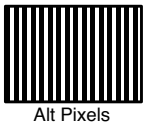

Crosshatch 4 x 4

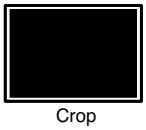

Crosshatch 16 x 12

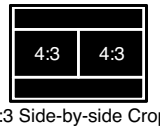

1.78 Aspect Ratio


1.85 Aspect Ratio


Color Bars (8)


Alt Pixels


Crop



4:3 Side-by-side Crop


2.35 Aspect Ratio

16:9 Side-by-side Crop

Memory Presets

A total of 25 default memory presets are available, each with factory-loaded picture-in-picture window configurations. These can be customized for quick saving of configurations and recall of size, positioning, and priority for both windows.

Scaled Output Resolutions

The MGP 462 offers 46 scaled output rates, including the following resolutions for computer-video, projectors, plasma and LCD monitors, and HDTV:

640 x 480	1024 x 1024	480p
800 x 600	1360 x 765	576p
852 x 480	1365 x 768	720p
1024 x 768	1366 x 768	1080i
1280 x 768	1365 x 1024	1080p
1280 x 1024	1400 x 1050	
1024 x 852		

Test Patterns

The MGP 462 offers 12 test patterns, including a crop pattern, crosshatch, 16 bar grayscale, color bars, alternating pixels, ramp, 4 x 4 crosshatch for use with video walls, three film aspect ratio patterns (1.78, 1.85, and 2.35), and crop patterns for setting up side-by-side windows. It also features a blue-only mode for proper setup of video color and tint levels.

RS-232 and RS-422 Control

The MGP 462 can be remotely controlled using Extron's Simple Instruction Set (SIS™) via third-party control or the Extron Windows®-based control program.

IP Link®

IP Link is a high performance intelligent network solution developed by Extron specifically engineered to meet the needs of professional A/V environments. Ethernet-enabled A/V products, such as the MGP 462, can be managed and supported by a technician or administrator at any time from any computer with a Web browser.

IP Link enables network exchange of BMP image files between the MGP 462 and a PC, as well as remote access to functions and status parameters including the internal operating temperature, and the horizontal and vertical sync frequencies for any input. IP Link also provides for saving and recalling of window presets, as well as window configuration, such as sizing, positioning, and text overlay.

IPLINK®

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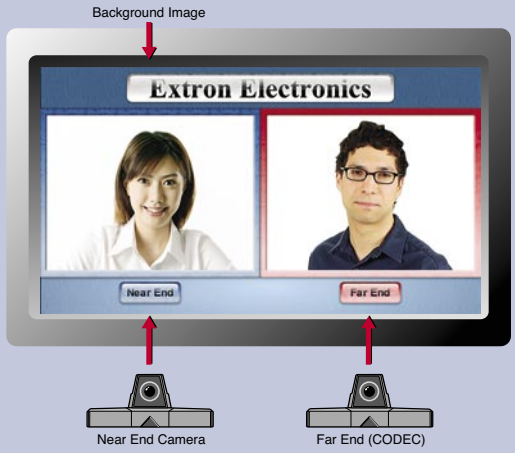
Videoconference, Distance Learning, and Corporate Applications

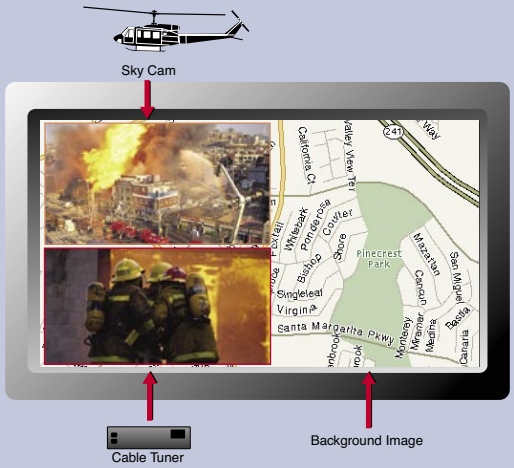
The MPG 462 combines high resolution computer-video graphics with full-motion video, enhancing impact, versatility, and professionalism in live video presentations. In a videoconference setting, a video window focusing on the presenter could be accompanied by the concurrent display of supporting graphs and illustrations from a PC. For corporate boardroom applications, the text overlay feature of the MGP 462 can be effective with multiple presenters. Using RS-232 or RS-422 control, or IP Link, text labels can be customized in accordance to the content of the picture-in-picture windows. With presentations that are formalized, windows can be set to appear into and disappear from the display using attractive visual effects such as wipes, reveals, and dissolves.



The MGP 462 generates a multi-image display, overlaying near end and far end video windows from a videoconferencing system on top of a background image.

Emergency Operations Center or Command and Control Applications

The ability to capture and display high resolution computer-video graphics as backgrounds adds an important dimension to multi-image presentations. For use in emergency operations centers (as illustrated), the background image could be a map identifying the location of a particular crisis. The source for this image is computer-video from a PC, captured and then stored by the MGP 462. One of the windows is a local camera feed to assess the situation; the other window is a local news broadcast of the event. Either of these windows could be used to display relevant facts and figures. Up to six input sources are interchangeable for each window.



The map is a captured computer-video graphic from a PC that serves as the background image, while two full-motion video windows use composite video sources (cable TV tuner & camera feed).

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The high resolution background image is uploaded to the MGP 462 via IP Link. The full-motion video windows display the radar feed and simulated cockpit view.

Live and Simulated Training Operations

Command and control applications, such as military and other training operations, can greatly benefit from the capability to simultaneously display multiple images. For the illustration shown, the MGP 462 serves as an essential aid in coordinating simulated air activities in a training mission. The background image was rendered on a PC and uploaded to the MGP 462 via IP Link. One of the windows displays a radar map, while the other window shows a cockpit view from one of the aircraft simulators. The MGP 462 accommodates switching for multiple simulators (up to four for computer-video). Various window customization options, such as zoom and image freeze control, can serve as beneficial tools in monitoring and analyzing content within both windows.

The background is created by capturing a computer-video graphic display of an x-ray within a window. The PC is the source for a slide show of images, while the VCR replays the surgery.

Medical Applications

The MGP 462 is ideal for presentations in medical facilities, such as symposia and instruction sessions in university hospitals. For example, an x-ray of a patient from computer-video is captured, stored, and displayed as a static image. One of the video windows is a replay of the surgery, while the other is a slide show of graphics from a PC, including x-rays, CAT scans, ultrasound and MRI images, and detailed photos of the operation. Medical facilities can also benefit substantially from the capability to download images captured and stored on the MGP 462 through IP Link. This is a very useful feature in generating documentation for case studies, or archiving important visual records.

SPECIFICATIONS

VIDEO INPUT

Number/signal type	4 RGBHV, RGBS, RGsB, RGBcvS, component video (interlaced or progressive), S-video, composite video 1 compone nt video (interlaced), S-video, composite video 1 S-video, composite video 1 optional digital component video (SDI, 270 Mbps)
Connectors	4 x 5 female BNC for RGB, component video, S-video, composite video 1 x 3 female BNC for component video, S-video, composite video 1 female BNC for composite video 1 female 4-pin mini DIN for S-video 1 female BNC for optional SDI component video
Nominal level	1 V p-p for Y of component video and S-video, and for composite video; 0.7 V p-p for RGB, 0.3 V p-p for R-Y and B-Y of component video, and for C of S-video
Minimum/maximum levels	Analog: 0 V to 1.0 V p-p with no offset
Impedance	75 ohms
Horizontal frequency	15 kHz to 100 kHz
Vertical frequency	50 Hz to 120 Hz
Resolution range	640 x 480 to 1600 x 1200
Return loss	<-30 dB @ 5 MHz

VIDEO PROCESSING

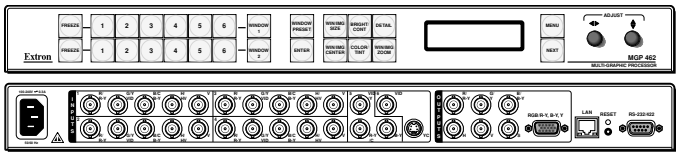
Digital sampling	24 bit, 8 bits per color; 140 MHz standard
Colors	16.78 million

VIDEO OUTPUT

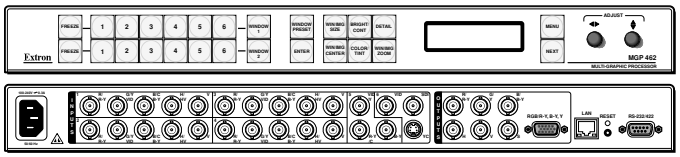
Number/signal type	1 scaled RGBHV, RGBS, RGsB, or HD component (YUV) video
Connectors	1 female 15-pin HD, 5 female BNC
Nominal level	1 V p-p for Y of component video, 0.7 V p-p for RGB, 0.3 V p-p for R-Y and B-Y of component video
Minimum/maximum levels	0 V to 1.0 V p-p
Impedance	75 ohms
Vertical frequencies	50 Hz, 60 Hz, 65 Hz, 96 Hz, 100 Hz, 120 Hz
Scaled resolution	640x480[1,2,3,4,5,6], 800x600[1,2,3,4,5,6], 852x480[1,2,3,4,5], 1024x768[1,2,3,4], 1024x852[1,2,3,4], 1024x1024[1,2,3], 1280x768[1,2,3,4], 1280x1024[1,2,3], 1360x765[1,2,3], 1365x768[1,2,3], 1365x1024[1,2], 1366x768[1,2,3], 1400 x 1050[1,2], HDTV 480p[2], 576p1, 720p[1,2], 1080p (1440 x 1080)[1,2], and 1080i[1,2] [1] = at 50 Hz [2] = at 60 Hz [3] = at 72 Hz [4] = at 96 Hz [5] = 100 Hz [6] = 120 Hz

SYNC

Input type	RGBHV, RGBS, RGsB, RGBcvS
Output type	RGBHV, RGBS, RGsB Tri-level on Y, R-Y, B-Y channels (component video 720p, 1080i, 1080p) Bi-level on Y channel (for all other component video rates)
Standards	NTSC 3.58, NTSC 4.43, PAL, SECAM



MGP 462



MGP 462D

Input level	0.0 V to 5.0 V p-p
Output level	TTL: 5.0 V p-p, bi-level, unterminated for RGBHV, RGBS, RGsB ±2.5 V p-p for component video (tri-level sync)
Input impedance	510 ohms
Output impedance	75 ohms
Max input voltage	5.0 V p-p
Polarity	Positive or negative (selectable)

CONTROL/REMOTE — PROCESSOR/DECODER/SCALER

Serial control port	RS-232 or RS-422, 9-pin female D connector
Baud rate and protocol	9600 baud (default), 8 data bits, 1 stop bit, no parity
Serial control pin configurations	2 = TX, 3 = RX, 5 = GND
Ethernet control port	1 RJ-45 female connector)
Ethernet data rate	10/100Base-T, half/full duplex with autodetect
Ethernet protocol	ARP, DHCP, ICMP (ping), TCP/IP, Telnet

GENERAL

Power	100 VAC to 240 VAC, 50/60 Hz, 30 watts, internal, autoswitchable
Rack mount	Yes, with included brackets
Enclosure type	Metal
Enclosure dimensions	1.7" H x 17.5" W x 12.0" D (1U high, 1 rack wide) 4.3 cm H x 44.5 cm W x 30.5 cm D (Depth excludes connectors and knobs. Width excludes rack ears.)
Product weight	6.8 lbs (3.1 kg)
Shipping weight	11 lbs (5 kg)
Listings	UL, CUL
Compliances	CE, FCC Class A, VCCI, AS/NZS, ICES

NOTE: All nominal levels are at ±10%

MODEL	PART NUMBERS
MGP 462	60-623-01
MGP 462D	60-623-02

Specifications are subject to change without notice.

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