



# Lightworks V.I.P 4500™ Online Editing System



**Four Independent Record Channels of  
Broadcast-Quality Video**

**Four Independent Play Channels of  
Broadcast-Quality Video**

**Flexible Lightworks Graphical User Interface**

**Simultaneous Autoconform Across Four  
Independent Channels**

**Variable Picture Quality Up to 48 Mbit/sec.  
per Channel**

**16 Channels of 48 kHz Digital Audio**

**Internal Real-Time Mix/Effects**

**32-Bit Anti-Aliased Rendered Titling**

**Control of External Devices**

**Optional RS-422 Serial Control**

**CCIR-601 Serial Digital Video I/O**

**Lightworks Editing Console**

**Windows NT™**

## The Online Non-Linear Editing Solution

The Lightworks V.I.P 4500 system is the first of a new generation of online broadcast nonlinear editing products from Tektronix. This revolutionary system is designed to replace conventional tape online suites and offers a smooth and cost-effective migration path to nonlinear technology. *"The best of both Worlds"*.

The Lightworks V.I.P 4500 system marries the Lightworks user interface with the technology of a Tektronix Profile digital disk recorder. This combination has a significant impact on the productivity and efficiency of the online suite.

The Lightworks interface, long the choice of editor's worldwide, incorporates a dedicated editing console, unique graphical user interface and powerful database capabilities. These tools allow the editor to work quickly and efficiently without impeding the creativity of the editing process, and can now be fully utilized in the professional online suite.

The Lightworks V.I.P 4500 system offers a number of unique benefits through its adaptation of Profile disk technology. The Profile's Multi-channel capabilities overcome the digitizing bottleneck (acquisition of material) whilst the Profile's broadcast picture quality is established worldwide. Selected Profile enhancements, including networking and storage options, will be adapted for use with the V.I.P editing system.

The Lightworks V.I.P 4500 product is designed to provide a natural evolution to nonlinear technology. For example, the Lightworks V.I.P 4500 has the ability to control external devices (DVE, production switchers, character generators) which allows the power of these dedicated machines to be retained, whilst giving added flexibility to the editor. The Lightworks V.I.P 4500 suite can

be adapted to suit your particular requirements and workflow, and (the external equipment) can be changed from job to job.

Today's Lightworks V.I.P 4500 system will put you solidly on the path to the future of editing, and the product will continue to grow with your needs.

## Four Independent Channels Of Online Picture Quality

The Lightworks V.I.P 4500 system has the capability of simultaneously accessing up to four independent channels of broadcast-quality video and 16 channels of audio. This immediately eliminates digitizing bottlenecks caused by a single "record" destination. By providing much faster throughput of material into the online system, program making and the auto-conform processes are dramatically improved.

## Audio

The audio functionality of the Lightworks V.I.P 4500 system includes 16 channels of broadcast quality analogue and/or AES/EBU digital audio. External audio control surfaces, such as the Yamaha 02R & 03D can currently chase to time code from the Lightworks V.I.P 4500 and a more advanced serial communication

will be supported in the near future. The OMF2 (Open Media Framework) interchange for audio and Lightworks audio files are supported. These can be read by many audio workstations such as AMS Neve, DAR, SSL, SADIE etc.

## Storage

The Lightworks V.I.P 4500 system has 72 gigabytes of internal storage as standard, providing approximately 200 minutes of broadcast quality video and audio to be stored on disk at 3 minutes per gigabyte (48Mbit/s) quality. External storage chassis (PDX 208) are available and can extend the system's storage capability up to 216 gigabytes (600 minutes of broadcast quality video and audio at 3 minutes per gigabyte quality). Additional RAID (PRS200 series) storage and archiving developments will be implemented in the future.

## Project Backup And Restore

The Lightworks V.I.P 4500 system utilizes an external Removable Optical Media Unit (ROMU) housing an 8X CD-ROM drive and a 2.6 gigabyte Magneto-Optical drive for project backup and restoration as well as media import and export.



The Stripview provides a graphic representation of all editing events.

## Offline To Online

The Lightworks V.I.P 4500 system is capable of internally handling a project from inception to completion by using offline picture quality to make the creative decisions and then auto-conforming the program to online-quality pictures for finishing. Material can be stored at different levels of picture quality (from 10 minutes to 3 minutes per gigabyte) in the same project. The Lightworks V.I.P 4500 system is fully compatible with projects offline externally on any other non linear offline system. The import or export of industry-standard EDL formats is also fully supported, as is OMF2 for audio interchange.

## Windows NT

In the Lightworks V.I.P 4500, the unique Lightworks user interface runs alongside the Windows NT 4.0 operating system.

## Internal Picture Manipulation

The Lightworks V.I.P 4500 system includes a mix/effects board that provides real time wipes and dissolves. A titling tool allows characters to be generated with rolls and crawls, and TARGA graphic files to be imported and processed by the V.I.P system's 32-bit rendering engine.

## External Device Control

The Lightworks V.I.P 4500 system has the ability to control existing external devices in an online suite with an intelligent RS422 serial control engine. The Lightworks V.I.P 4500 can currently serially control the GVG1200 Vision Mixer, DPM700 DVE and Pinnacle Alladin. Interfaces for the Krystal DVE, Pinnacle DVExtreme are due in a future release. GPI triggers are



Perform internal mixes and wipes in real time.

supplied as standard and can control other external devices such as CG's, Still Stores etc.

## Edit-To-It, Voice Over And Multicamera Editing

Edit-to-It allows material (with handles) to be digitized directly from tape to the desired point in the edit, thus avoiding the need to pre-digitize material. A unique 'Sync Roll' of the edit allows the actual edit 'in point' to be viewed in the User Interface. Providing for News editing a fast and flexible means of creating a story from raw material. The Voice-Over tool allows a voice to be recorded against an edit that is being played in real-time for visual and aural references.

"Multicamera Editing" is a standard feature in the Lightworks V.I.P 4500. In combination with the systems ability to record up to four video channels and 16 audio channels simultaneously it can provide a fast means of turning around and finishing programs such as Talk Shows, Game Shows and Episodic Dramas. The complete

off line digitizing process is saved without losing any of the "creativity" through the use of the Lightworks "Multicamera editing" process. As everything is at 'Online' quality no additional conforming process is required, just a playout of the completed transmission master.

## Networking

Real-time digital video/audio transfer technology is available today, and provides the flexibility and expandability suitable for most applications at an attractive price/performance point.

In a future release, the Lightworks V.I.P 4500 will integrate with the Profile Fibre Channel topology allowing media to be transferred between V.I.P's and Profile PDR devices in its original data format. There will be a number of options for the management of the media on the network and controlling the transfer, the initial implementation will be with the internal 'Media Manager' tool with 3rd party Media Management applications being integrated at a later date.

## Lightworks V.I.P 4500 System Hardware Specification

### Video System

PAL & NTSC

(Software selectable)

### Inputs

8 Serial Digital SMPTE 259M/EBU Tech 3267

1 Composite reference (1V pk-pk. loop)

### Outputs

8 Serial Digital SMPTE 259M/EBU Tech 3267

### Video Compression Ratio

Maximum 50 min/GB

Minimum 2.5 min/GB(48MB/S)

### Time Code

Longitudinal Time Code (LTC) via breakout cable

4 input XLR 3 (female),  
15 kOhm >100mV pk-pk

4 output XLR 3 (male),  
<600 Ohm, 4V pk-pk max.

### Power

100-240V, 50/60 Hz, 12A max.

Power consumption <1000VA

### Physical

#### Main crate Dimensions:

Height - 5RU (8.75"/222mm)

Width - 19" Rack mount (483mm)

Depth - 25.5" (648mm)

Weight - Net 70 pounds (31.75kg)

### Audio system

16 Analogue and Digital Audio inputs and outputs

Input Sampling Frequency 32/44.1/48kHz  
20 bit linear

Output Sampling Frequency 48kHz  
20 bit linear

16 Channel Processing

Full Broadcast Quality

PAC 216 2 x 2RU 19" Rack mount chassis

### Input

16 analogue XLR 3 (female)

Electronically Balanced

High Impedance Input

8 AES/EBU digital XLR 3 (female) stereo  
16 Bit (44.1/48 kHz)

1 AES reference XLR 3 (female)

1 80 pin sub miniature ribbon type connector ( V.I.P chassis to PAC 216) supplied as standard

### Output

16 analogue XLR 3 (male)  
Electronically balanced

Low Impedance Output

8 AES/EBU digital XLR 3 (male) (48 kHz)

2 Analogue monitoring output XLR 3 (male)

1 80 pin sub miniature ribbon type connector XLR PAC 216 chassis to PAC 216-01 extension chassis. Supplied with PAC 216-01

### Power

100-240V, 50/60 Hz, 125 watts

### Physical

Height - 3RU (1.75"/44.45mm)

Width - 19" Rack mount (483mm)

Depth - 17" (430mm)

## Ordering Information

### The Lightworks V.I.P 4500 comes complete with:

#### Lightworks V.I.P 4500 Main crate containing:

8 x 9.1 GB Internally mounted Hard Drives

3 1/2" 1.44MB Floppy Disk Drive

1 Gb System Drive

Microsoft Windows NT 4.0™

Lightworks V.I.P 4500 Software (pre loaded)

Lightworks V.I.P 4500 Operation Manual

GPI Interface 16 contact closures (37 way D series connector)

#### Lightworks Console

##### Keyboard

##### Mouse

##### 2 x 20" Hi-res Graphic Monitors

##### 17" VGA Monitor (NT)

##### Console Cable

##### Audio Interface Cable

##### 3 VGA monitor cables

##### Audio Interface Chassis

##### 1 Year Hardware Warranty

##### 1 RU 19" Rack mount chassis containing:

8 x 9 pin D type connector breakout box (RS422/RS232)

##### 3RU 19" Rack mount chassis containing:

1 x Tahiti 4 2.6Gb Magneto Optic drive

1 x CD ROM player 8 x speed

### Options

2 off Maximum

PDX208 Storage Expansion Chassis (8x9GB)

Option details on application from your Lightworks representative (See below for regional contact details)

A continued development program means that the feature set will evolve as the product advances and reaches new applications. Lightworks Editing Systems Ltd has the right to change this specification at any time without prior notice.

V.I.P Hardware specification  
January 1997

### Warranty

Products offered by Tektronix are manufactured to provide the highest level of reliability and performance. Tektronix warrants these products against defects in materials and workmanship in accordance with the warranty statement applicable with each product. If any product fails during the warranty period, Tektronix will provide the remedy set forth in the applicable warranty. A copy of the warranty applicable to a particular product offered by Tektronix may be obtained from your nearest Tektronix office.

### Technical Support

TekCare is a comprehensive portfolio of software and hardware support services designed to ensure that you get the best performance from your Tektronix products. Services include complimentary basic support, hotline support, extended warranties, on-site service coverage, installation support, customer training and software update support. Each service can be customized to meet specific organization and system needs.

#### For further product information or to find the sales office nearest you, please contact:

Tektronix, Inc.

#### Video & Networking Division

PO Box 500, MS 58-965  
Beaverton, OR 97077-0001  
USA

North America phone: (800) 547-8949

North America fax: (503) 627-7275

Latin America fax: (305) 477-5385

Europe fax: 33 (1) 69 07 0937

Asia fax: (852) 2802 2996

InfoFAX: (800) 704-8843

URL: <http://www.tek.com/VND>

