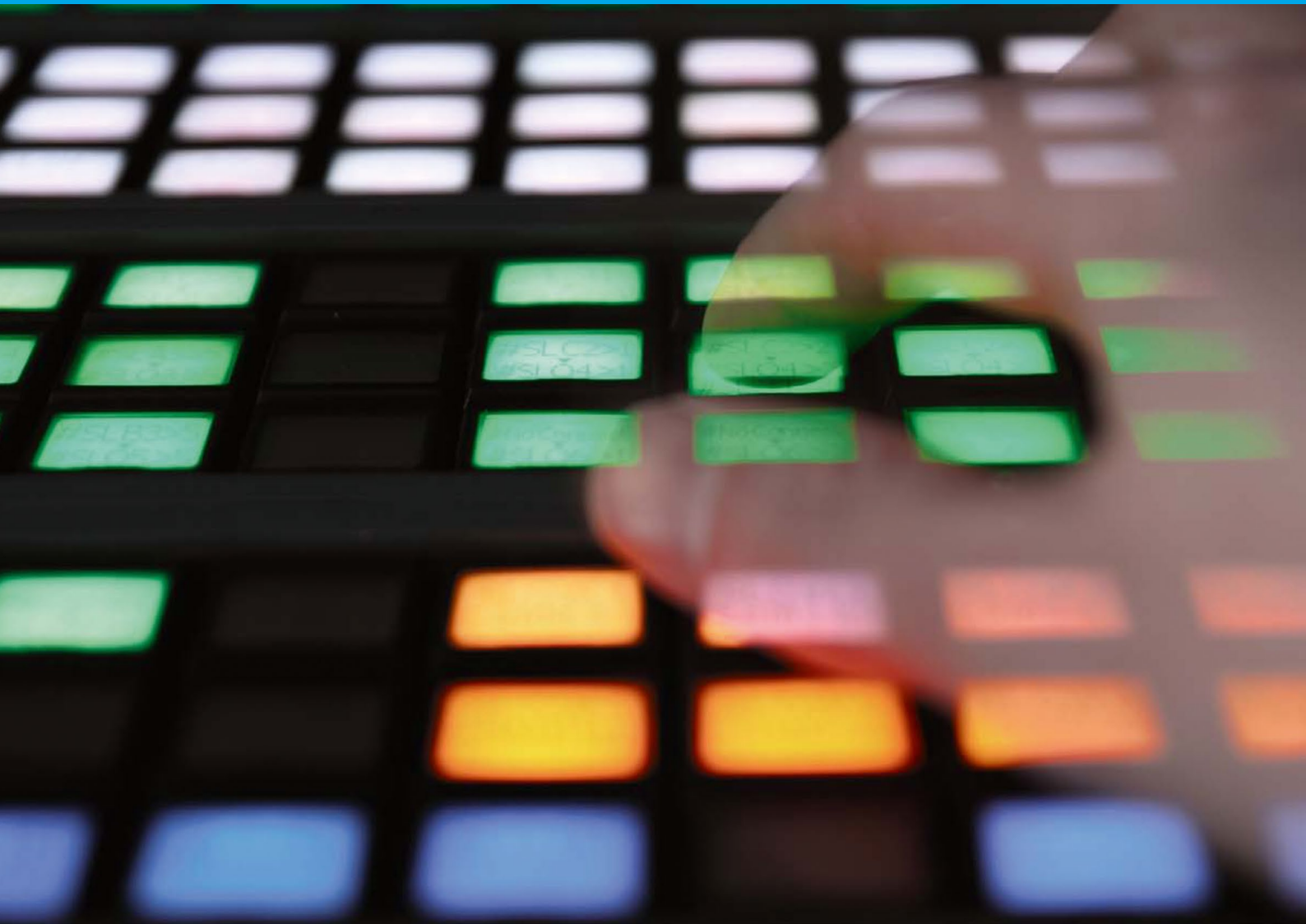


# VSM



BROADCAST  
CONTROL AND MONITORING  
SYSTEM



MARKET LEADING  
**WORKFLOW OPTIMIZING**  
FREEDOM OF CONTROL

# VSM

## INTRODUCTION

### VSM



#### **MOBILE PRODUCTION**

##### **HANDLING FAST CHANGING ENVIRONMENTS**

- Unbeatable speed and flexibility for changing environments
- Integrated Tally system
- On-the-fly panel layout changes



#### **STUDIO LIVE PRODUCTION**

##### **SIGNAL MANAGMENT & MONITORING**

- Fast and simple
- Always real-time, always online
- Maximizing hardware resources



#### **TV MASTER CONTROL ROOM**

##### **DISASTER RECOVERY & PREPARATION**

- Virtualizing environments
- Strong redundancy concepts designed for 24/7/365 non-stop operation
- SNMP and alarm management



#### **RADIO MASTER CONTROL ROOM**

##### **FACILITY-WIDE CONTROL & SCHEDULING**

- Resource management
- Remote control
- Emergency switching

# VSM

## INTRODUCTION

Making the most out of available budgets, technology and personnel resources are hot topics for both engineers and management in today's modern broadcast environment. With technology advancing so fast, protecting investments in professional broadcast hardware over the long term becomes a harder challenge day by day.

Combine this with the need to simplify operational tasks and workflows to increase efficiency, without compromising on-air quality and security, and the importance of investing in flexible core infrastructures becomes even more apparent. The key to addressing all these topics revolves around a single sophisticated layer of control throughout an entire system.

Imagine having an independent control and monitoring system that allows operation, configuration and system integration of your chosen broadcast equipment and third-party devices.

The concept separates hardware technology decisions from the operational control requirements, therefore allowing core hardware components to be freely exchanged without changing interfaces or workflows for operational and technical staff. Training costs and time can be saved due to a single control system administrative interface that handles the control and setup of numerous devices.

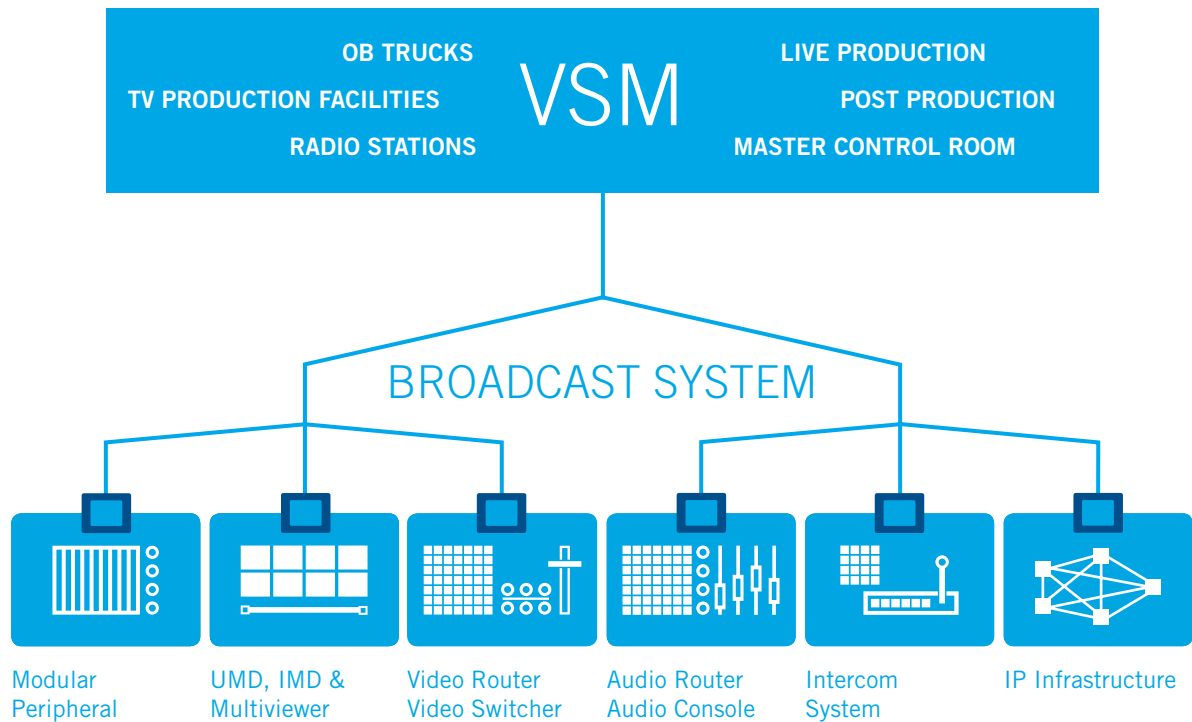
Abstracting the control parameters of many devices into a single control layer provides a platform to freely create workflows and user interfaces specifically optimized to simplify operational tasks without reference to the hardware behind. The VSM control system offers an extensive system integration toolbox that allows the customer to easily change interfaces without manufacturer support, giving peace of mind that the system will be able to adapt and grow as needs and requirements change over time.

# VSM

## CONCEPT



### BROADCAST CONTROL AND MONITORING SYSTEM



# VSM

## CONCEPT

### CONCEPT & VISION

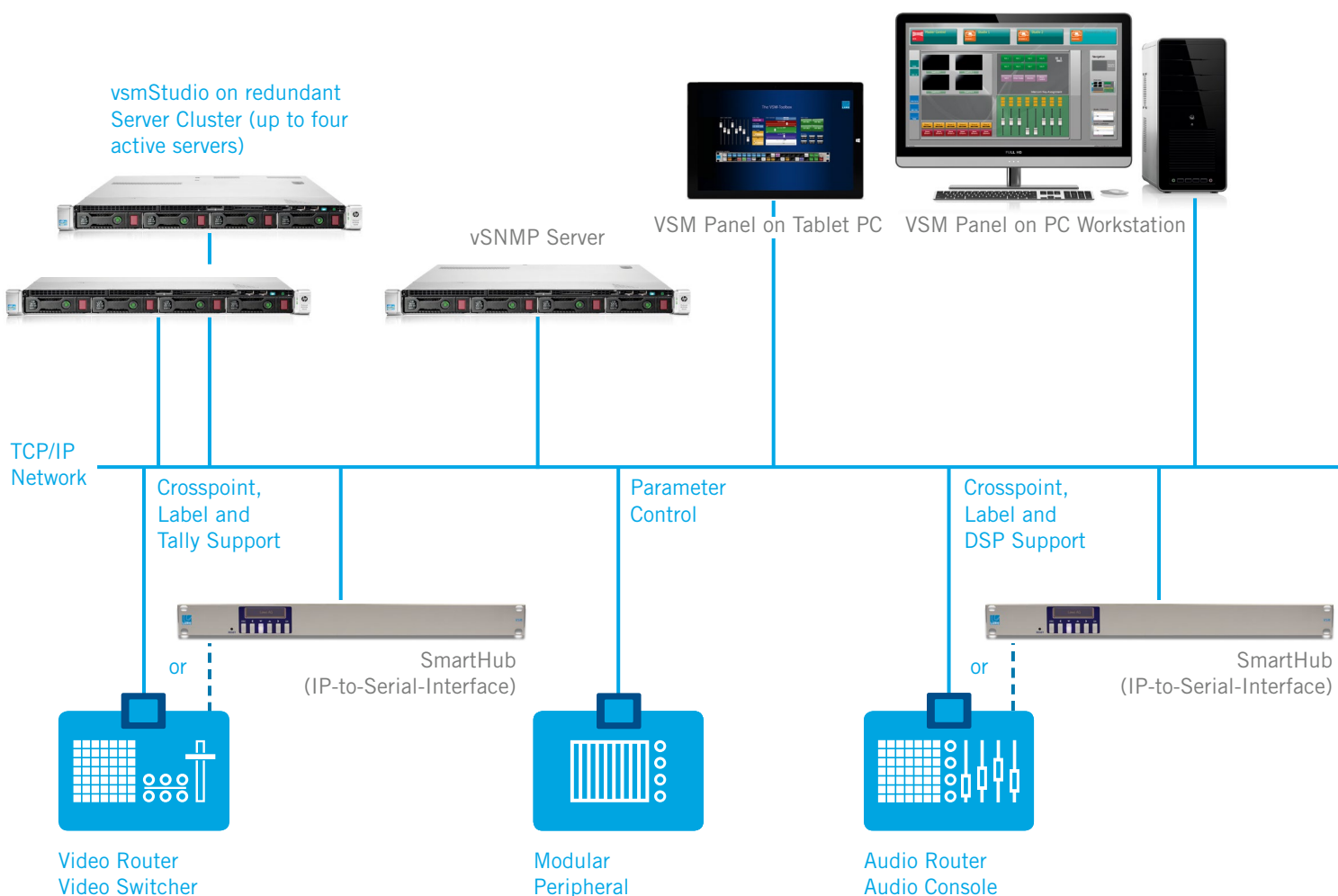
- Be the most open and sophisticated broadcast control system on the market!
- Supply the best system integration and control interfaces to all essential broadcast equipment!
- Remain third-party hardware manufacturer independent to offer free choice based on the best technology available!
- Protect the investment of our customers by a commitment to continual protocol implementation!
- Provide unique logic solutions to simplify operational user interfaces and workflows!
- Offer a simple to operate yet powerful tool box allowing configuration changes, system expansion and workflow changes without manufacturer support!

# VSM

## SYSTEM ARCHITECTURE

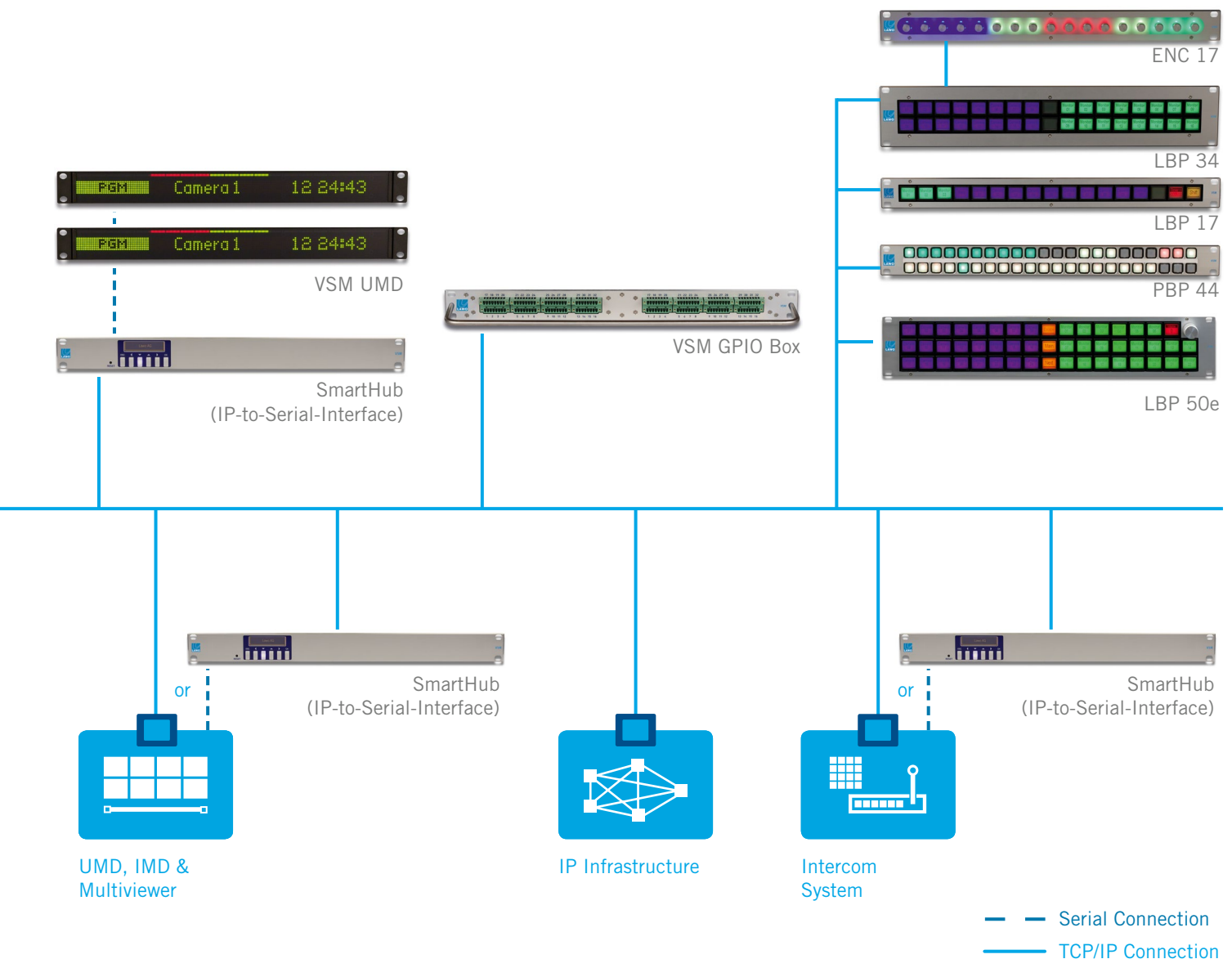
# VSM

## SYSTEM ARCHITECTURE



With hundreds of different protocols implemented and growing by the day, VSM already seamlessly integrates with the majority of the most popular broadcast equipment on the market. These include video routers, video switchers, audio routers, audio consoles, multi-viewers, intercoms, modular equipment and many special third-party devices. By talking native protocols where possible, equipment from different manufacturers can be seamlessly

“glued” together, giving unmatched recall and logic control possibilities system-wide. With a modern TCP/IP backbone, VSM utilizes standard IT hardware but enhances reliability and redundancy with sophisticated software redundancy concepts. VSM also provides interfaces to connect serially controlled devices, again freeing you to decide on the best hardware technology, no matter the format of the physical control interface.



VSM servers are the heart of the control system. Running vsmStudio software, all administration and configuration is both programmed and saved runtime in intuitive and easy to use software. Control interfaces in the form of a wide range of hardware LCD button panels and software panel clients allow simplified operation from highly flexible and custom designed configurable GUIs.

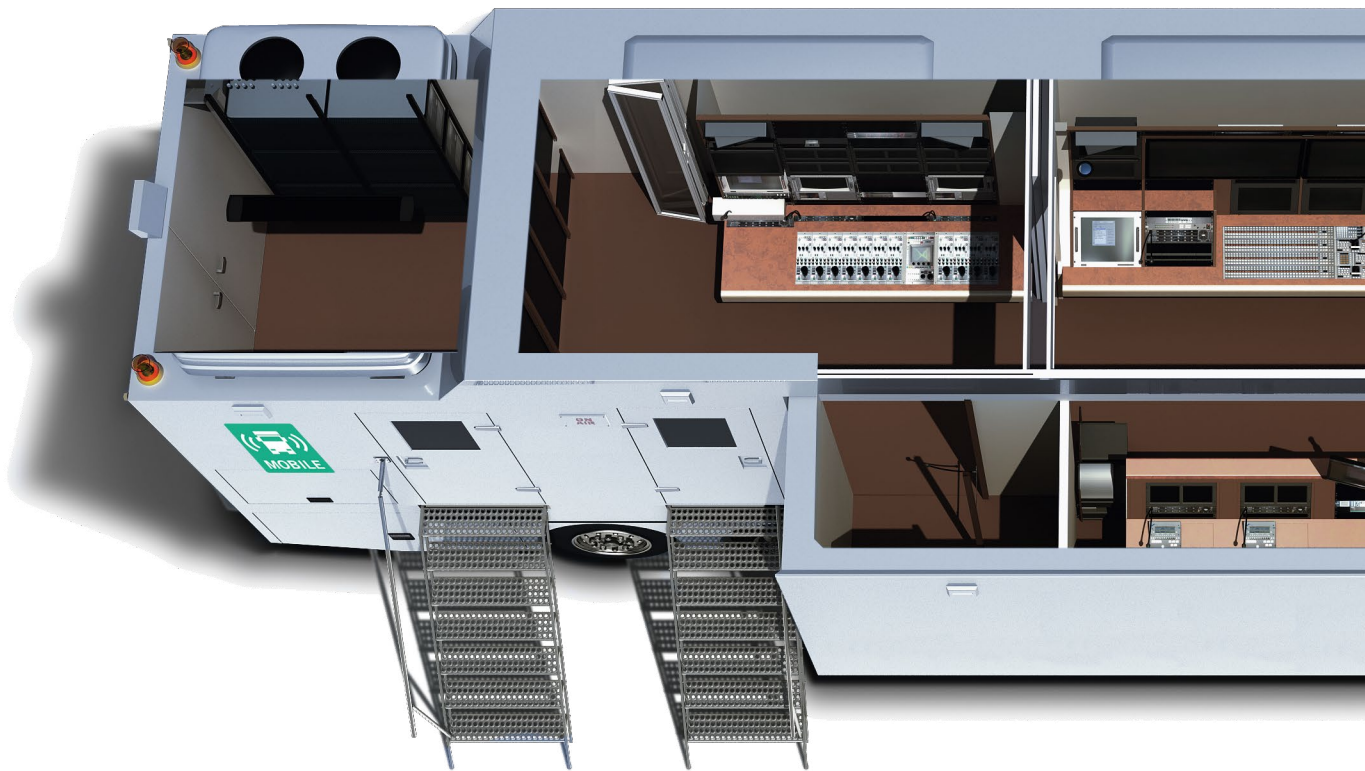
Additional VSM hardware includes GPIO interfaces, UMDs for dynamic labelling, and SmartHubs, which convert control signals to and from serial to TCP/IP. SNMP Monitoring capabilities are realized via the vSNMP editor software tool which runs on a separate server. VSM is the ultimate control system integration solution.

# VSM

## APPLICATIONS

# Mobile Production

## SETTING THE STANDARD FOR UNIFIED CONTROL



Flexibility, efficiency and fast reaction: the essential requirements for today's and tomorrow's mobile environment. Situations can change very quickly in the high pressure mobile truck environment, even on a daily basis. A host of new challenges are being presented to the technical teams on location as 3D, 4K and 5.1 surround sound become the norm

rather than the exception. Short setup times and fast reaction to production staff demands on location are essential for smooth and stress-free mobile productions. Any tools and functions in the hands of mobile engineers that simplify and speed up the setup of the production environment are hugely beneficial. This is where VSM comes into its own.





“VSM brings a level of automation to the complex setup process not previously attainable.”

George Hoover, Chief Technology Officer, NEP



#### THE VSM STANDARD IN MOBILE PRODUCTION

- A single control interface for numerous devices – learn one not many
- Global system wide snapshots for complete recall of recurring show setups
- No need for an external Tally system – VSM has built-in sophisticated Tally and signalization logic
- Centralized labelling simplifies and speeds up operation
- Virtual signal paths provide unbeatable speed and flexibility for a constantly changing environment
- Bundle different signal types together logically to route multiple signals from a device at the press of a button
- Simple and flexible control panel design to adapt to or optimize existing production workflows
- Real-time changes to panel layouts without the need for an upload
- Touchscreen operational GUIs for simplified and efficient control
- Wireless tablet support for portable control panels incorporating control of numerous devices

# VSM

## APPLICATIONS

# Studio Production

## MAXIMUM RESOURCE FLEXIBILITY – VSM HAS IT UNDER CONTROL

Modern TV production facilities are looking to maximize the flexibility of available resources to get the most out of hardware and real estate investments. Centralizing routers, intercom systems, modular gear and other hardware devices to be accessible in all studios brings both operational flexibility and studio redundancy features. Administering the availability of these resources to the various studios needs careful management and logic. Shifting a production from one control room to another in an emergency is only sensible if

all aspects of the original production (signals, labels, panels, multiviewers, Tally, etc.) can be quickly established and setup. The advantage of a system that has control over all major equipment is clearly to understand. VSM offers unique functionality to handle both the resource management and studio switching requirements in fast and simple operational steps – maximizing your hardware investments!





“We like the ease of use and got accustomed to it very quickly. It fulfils our needs perfectly and in fact we cannot do without it anymore.”

Sjaak Vreeburg, Manager Resources at Endemol

#### VSM SIMPLIFIES OPERATION IN MULTI-STUDIO ENVIRONMENTS

- Dynamic router tieline management that includes transparent Tally logic
- “Boxing” complete studios for fast switching to emergency backup studios on the fly
- Prepare a production offline and recall to any free studio/control room combination
- Automatic resource management with administration and user rights
- Global system wide snapshots for recalling and scheduling recurring show setups
- Complete Tally management across multiple studios and facilities
- Working side by side with news automation systems to maximize available resources
- Combine hardware and software control interfaces for simplified control

#### VSM HIGHLIGHTS: BOXING TREATING PRODUCTION STUDIOS AS BOXES

As resources become centralized, system capabilities dramatically increase in size, thus becoming difficult to manage. Virtualizing temporary setups of resources, which can then be recalled to any studio environment in a preset, simplifies resource management even for the largest of systems. “Boxing” the resources into virtual environments means moving complete productions from one studio to another is as simple as one button push – workflow optimization at its best!

Any available studio now becomes a backup for a production even if equipment is different – the ultimate disaster/recovery solution. In addition, an available studio can be used to prepare a production which can then be recalled to any other in the studio cluster with the single push of a button!

- Maximizing the use of broadcast system resources
- Disaster/recovery solution with a single button push
- Maximum resource flexibility
- Simplification of operation in multiple studio environments





# TV Master Control Room (MCR)

## YOUR MISSION-CRITICAL CONTROL IS IN SAFE HANDS

Any system to be utilized in the mission-critical MCR application for TV must offer sophisticated redundancy features to ensure 24/7 operation without critical failures under any circumstances. In addition, control requirements are based around pre-programmed transmission switching, switching control from third-party automation systems, signal monitoring and alarms with automatic routing based on specific alarm status or logic detection. Quick operational reaction to failed devices is essential to ensure transmission lines never go “dead”.

Signal path overviews and automatic handling of different signal types and formats are also essential requirements for a unified control system designed for this use. With VSM's unique “Pooling” function, customers can easily manage their signals through the whole MCR by automatically inserting free “pooled” devices dynamically and automatically setting the device so that the signal arrives in the right format. If one of the devices fails, VSM will automatically re-route the signal to another spare device without user intervention.





#### **VSM IS TRUSTED IN THE MOST CRITICAL OF APPLICATIONS – TV MCR**

- Strong redundancy concepts designed for 24/7 non-stop operation
- Built-in scheduler for pre-programmed routing and system-wide parameter changes
- Control and integration with third-party automation and scheduling systems
- Automatic signal routing to simplify the handling of different signal formats
- Manual override control possibilities of “Channel in a box” solutions
- Sophisticated SNMP and alarm management to avoid problems before they become critical

#### **VSM HIGHLIGHTS: POOLING SIMPLIFYING AND AUTOMATING SIGNAL MANAGEMENT**

VSM simplifies and automates operation by automatically inserting a free ‘pooled’ device dynamically (such as a frame synchronizer) and automatically setting the device so that the signal arrives at the target in the correct format. As MCR operations are mission critical, if one of the currently used pooled devices should fail, VSM will automatically re-route the signal to another spare device without user intervention.

The failed device is then tagged as failed and any subsequent insertions will no longer utilize this device until the administrator clears the tag. This unique functionality simplifies operation and ensures continuous error-free transmission.

- Automatic signal routing to simplify the handling of different signal formats
- Ensures 24/7 operation without critical failures
- Manages your signals through the whole MCR
- Automated device management



# VSM

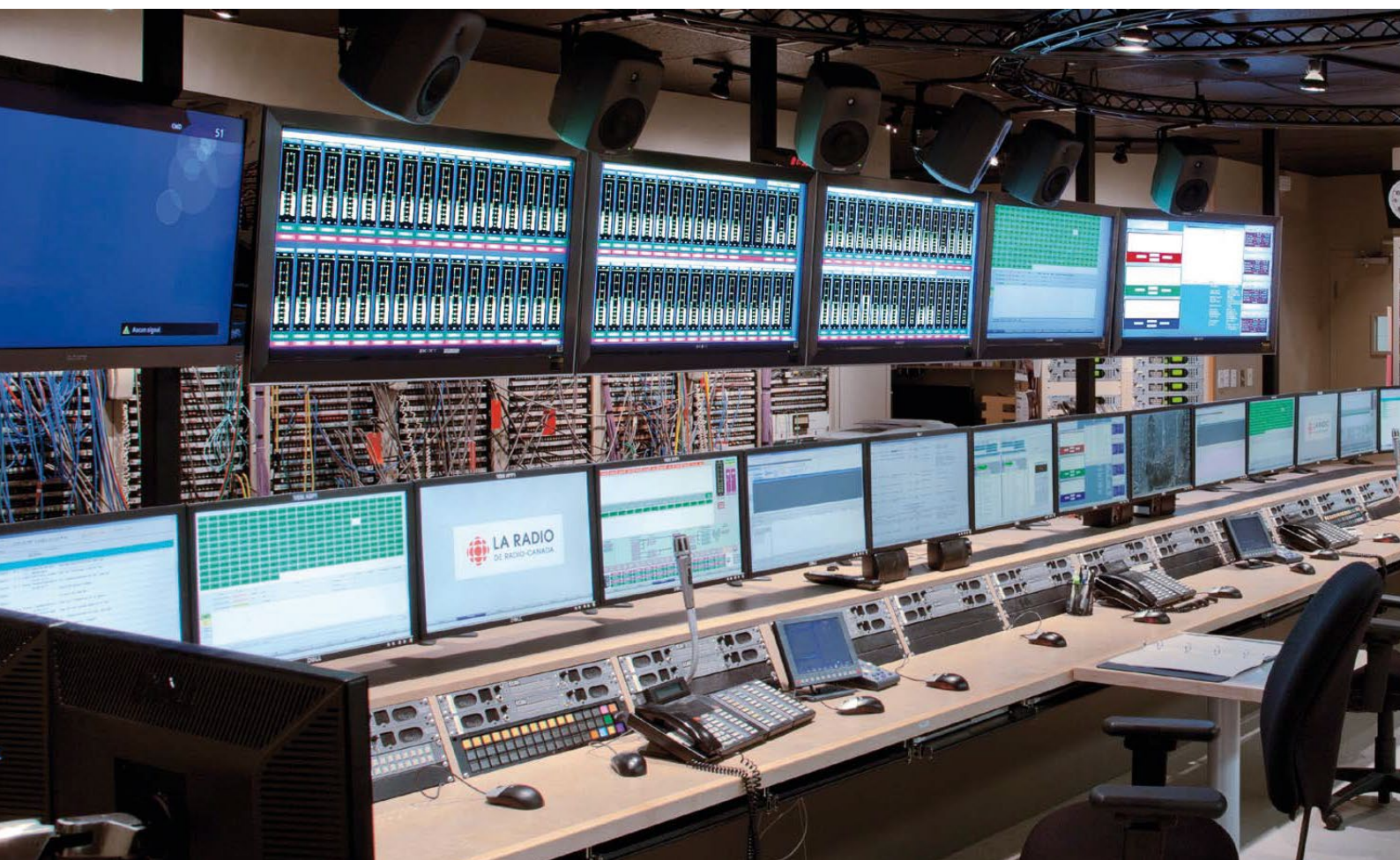
## APPLICATIONS

# Radio Master Control Room (MCR)

## PERFECT MONITORING AND CONTROL WHILE BEING ON-AIR

Already installed in numerous MCRs across the world, VSM is your trusted partner to handle even the largest and most sophisticated system requirements. The VSM system takes into account the unique requirements of a Radio MCR, thus providing special functions for radio applications. For instance, in combination with appropriate audio routers, silence detection is managed easily. A rule management system, that can be defined freely, assists in the automatic change of transmission lines, audio sources, peripheral equipment or can trigger emergency switchings. The handy apology rules editor helps to manage even complex fall back and backup scenarios.

Transmission line and audio source management is also easy to handle – with continuous signal flow control. With the use of VSM's tieline management functionalities even decentralized broadcast facilities are easy to control. With VSM, satellite downlinks and ISDN codecs can be implemented seamlessly and simply coordinate the original source and final destination. In daily operations, recurring studio swaps can be the normal and with VSM these automatic actions are easy to implement. With the use of VSM's timers and routing management, operators and editors are supported significantly, so that they can concentrate on the creative part of the job.





#### VSM IS TRUSTED IN THE MOST CRITICAL OF APPLICATIONS – RADIO MCR

- Strong redundancy concepts designed for 24/7 non-stop operation
- Built-in scheduler for pre-programmed routing and system-wide parameter changes
- Silence detection implemented easily
- Easy integration with third-party automation and scheduling systems with built-in scheduler and functionalities
- Remote control of complete facilities and even remotely located facilities
- Easy overview about signal sources and destinations – facility-wide or between different facilities

# VSM

## COMPONENTS

# VSM Components

THE HIGHEST FLEXIBILITY COMES FROM THREE PARTS

# VSM

**VSM** Software Toolbox

**VSM** Custom Configuration and Support

**VSM** Gear Hardware





# VSM Software Toolbox

## EVERYTHING AT HAND

### **vsmSTUDIO – POWER AND CONFIGURABILITY IN YOUR HANDS**

vsmStudio software is the heart of the VSM system and the main administration and configuration tool that runs continuously on all VSM servers in the system. From here, an easy-to-use GUI provides all the functions, tools and setup wizards to control and customize your VSM system to your specific application and workflow needs. Additionally, all connected hardware settings and statuses are shown in real-time, with instant control and feedback.

After initial assistance and factory support with custom configuration to mold the product into the project specific requirements, the customer is trained on the toolbox so that changes to all parts of the system can be handled without further factory support. As your needs change, the full power and configurability of VSM is in your hands. In addition, technical staff need only learn one system interface to control numerous devices, saving time and money in training.

### **vSNMP – MONITOR AND CONTROL IN A COMBINED WORKFLOW**

The world of control and monitoring is brought together with an easy-to-use SNMP Manager (NMS). As broadcast facilities grow in size and complexity from individual buildings to multiple locations, there is a greater need to monitor the system in its totality from a central location. vSNMP is a powerful option which not only provides monitoring for broadcast equipment but also accounts for standard IT devices such as routers and servers to give an overall facility monitoring solution.

### **vsmSTUDIO FEATURES**

- Heart of the VSM product
- User-friendly software to handle all configuration, administration and central control
- Configuration changes occur in real-time with no download or need for the system to be offline
- Offline configuration possible
- Remote access, control and support with standard secure IT solutions
- Multiple server redundancy synchronization and seamless change-over
- True real-time status monitoring of attached devices
- Virtual matrix view allows all router layers to be combined, organized and controlled in custom XY views
- Redundant 3rd party driver connection engine for peace of mind
- Monitoring and control can be combined into a single workflow maximizing response times

### REDUNDANCY – RELIABLE OPERATIONS IS OUR DAILY BUSINESS

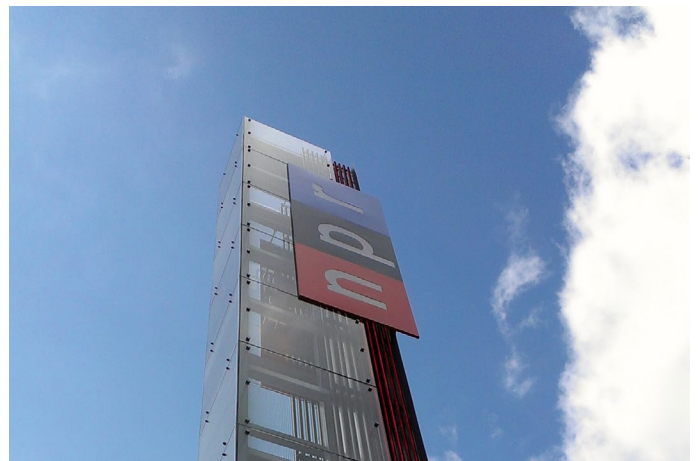
With hundreds of VSM systems installed across the world in daily live production and MCR environments, VSM was built from the ground up with redundancy and rock solid reliability at its heart. vsmStudio software can be installed on up to four servers and uniquely run without a master/slave server cluster logic. With VSM's proprietary sophisticated software logic, the system automatically load-balances all connected devices amongst the servers to automatically optimize system performance. Should a server from the cluster fail, the connected hardware devices automatically and seamlessly connect to an alternative server in the cluster without the loss of operation or performance – peace of mind, safe and secure!

“The VSM toolbox provides us with the flexibility to make the necessary changes that are continually required to provide content 24/7/365.”

Shawn Fox, Senior Director Engineering, NPR

#### VSM REDUNDANCY FEATURES

- Offers redundant connections to third-party devices with auto switchover where supported
- vsmStudio software can be installed on up to four servers in a cluster
- Sophisticated proprietary server cluster logic – master/master configuration
- Automatic load balancing of connected devices to cluster
- Background server synchronization of configuration data
- Redundant serial bus connections
- Any panel can act as a backup



# VSM Custom Configuration & Support

## HELPING YOU UNLEASH THE FULL POTENTIAL OF VSM IN YOUR BROADCAST ENVIRONMENT, BOTH NOW AND IN THE FUTURE

Now that VSM is in your hands, we will empower and support you to maximize your investment. VSM is not just a control system, but a sophisticated toolbox which allows operational workflows and user GUIs to be custom created to match your specific needs. Our project engineers have experience in all broadcast applications, with hundreds of projects implemented with broadcasters large and small spread across the globe. Using this vast experience, we partner with you during the project implementation stage to help mold and configure VSM to support your existing workflows and environments.

Our job is to better understand your daily challenges so that we can help to streamline and simplify your most complex tasks by utilizing VSM's unique concepts and features.

A number of Service Level Agreement (SLA) options are available offering peace of mind with a combination of rapid emergency support response times, extended warranty options and future software upgrades features. Standard or customized packages can be offered.

We run regular group or private training sessions at our training facility in Germany for both introduction and advanced courses. As your needs change, we are always on hand to advise and consult to ensure that you continually maximize and protect your investment.

### PRE-SALES

- Consulting and Design

### PROJECT REALIZATION

- Consulting and Configuration
- Onsite Commissioning and Configuration
- Training ("Train the Trainer")

### ONGOING SUPPORT

- Technical Support
- Service Level Agreement (SLA)

# VSM Control Panels

IT'S NOT EASY BEING EASY, BUT WE HAVE THE DESIGN TOOLS TO MAKE YOUR OPERATIONAL WORKFLOWS AND USER INTERFACES JUST THAT!

## CONTROL INTERFACE POSSIBILITIES

For all the engineering benefits and flexibility that VSM brings to the broadcast environment, the accessibility and ease of control for operational personnel is paramount to the system design.

A combination of hardware button panels and software or web-based control clients form the basis of this interaction. All panel configuration and design is handled directly in the vsmStudio software with no need for panel reboots or configuration downloads – changes are instantaneous!

## vsmPANEL



vsmPanel is a software that runs on a network PC workstation client (Windows based) and, from a design and setup perspective, acts identical to a hardware panel. In fact, the administrator can control and view any hardware panel in the system directly from this client, if needed. Any number of client licenses are possible, each offering a different control interface if necessary. Normally operated in conjunction with a touchscreen for the most intuitive operation, vsmPanel allows free design and layout of an operational interface which can include pictures and images. Adding company logos and corporate design features to the panel design add to the user experience and interaction. In addition, advanced control functions such as graphical faders, meters (meter data over protocol), alarm management, scheduling control, web browsers and media players can all be freely incorporated into a panel design. There are no limits to the number of control “pages” within a panel and with a large toolbox of button navigation possibilities, even the most complex workflows can be easily accommodated and, in most cases, simplified. Even complete signal path views can be created giving crucial feedback and routing status in complex applications.

## LBP-SERIES

The LBP series of hardware control surfaces have fully configurable multi-color graphical LCD buttons which provide unmatched status display, control and monitoring possibilities. Each button has the ability to perform multiple functions from a single push, thus hugely increasing the operational flexibility of the panels. Hardware investments are protected by the fact that VSM control surfaces are not dedicated to any device or function – control and monitoring what you need wherever you need it.



### LBP 17

17 LCD Buttons RGB-Backlight, Ethernet / 1RU



### LBP 16e

16 LCD Buttons RGB-Backlight + 1 Encoder, Ethernet / 1RU



### LBP 34

34 LCD Buttons RGB-Backlight, Ethernet / 2RU



### LBP 33e

33 LCD Buttons RGB-Backlight + 1 Encoder, Ethernet / 2RU



### LBP 51

51 LCD Buttons RGB-Backlight, Ethernet / 2RU

## LBP SERIES HIGHLIGHTS

- LBP series of hardware control and monitoring panels have fully configurable multicolor graphical LCD buttons
- Buttons provide unmatched status display and control possibilities
- Each button can perform multiple functions from a single push, thus hugely increasing the operational flexibility of the panels.
- Every action initiated from a button is executed in real time and for operational safety and clarity, the button displays will only show the true and current status of crosspoint or parameter settings.
- No limits to the number of control “pages” within a panel and with a large toolbox of button navigation and function possibilities
- Panels can be configured, maintained and controlled remotely
- Can be used as stand-alone panel (vsmSnap)
- All panels can be connected to ENC 17 (rotary incremental encoder panel)
- Several panels can be connected logically to work as one
- Direct Ethernet connectivity to the VSM network
- Each panel has two built-in GPIOs for free use
- Socketed buttons for easy replacement
- User access rights transfer via RFID tag reader

# VSM

## COMPONENTS

### LBP-SERIES



#### **LBP 50e**

50 LCD Buttons RGB-Backlight + 1 Encoder, Ethernet / 2RU



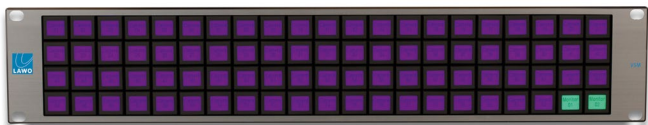
#### **LBP 42**

42 LCD Buttons RGB-Backlight, Ethernet / 1RU



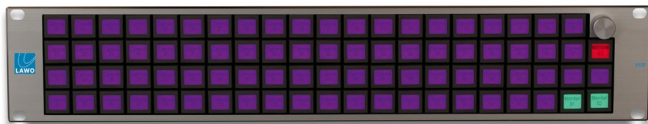
#### **LBP 41e**

41 LCD Buttons RGB-Backlight + 1 Encoder, Ethernet / 1RU



#### **LBP 84**

84 LCD Buttons RGB-Backlight, Ethernet / 2RU



#### **LBP 83e**

83 LCD Buttons RGB-Backlight, Ethernet / 2 RU



#### **LBP 32-DT**

32 LCD Buttons RGB-Backlight, Ethernet



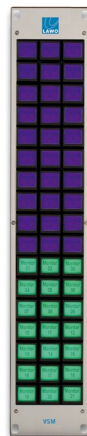
#### **LBP 31e-DT**

31 LCD Buttons RGB-Backlight + 1 Encoder, Ethernet



#### **LBP 34V**

34 LCD Buttons (E3)  
RGB Backlight  
Ethernet



#### **LBP 51V**

51 LCD Buttons (E3)  
RGB Buttons  
Ethernet



#### **LBP 39ocp**

39 LCD Buttons (E3)  
RGB Backlight  
Ethernet  
Dimensions match Camera RCP

## PBP, TTP & ENC SERIES

### PBP SERIES HIGHLIGHTS

- All control and monitoring functionalities in a cost-effective 44 button panel
- Full support of the available toolbox within VSM
- Not only a simple routing panel – it's more than that



#### PBP 44

44 Pushbuttons RG-Backlight, Ethernet / 1RU

### TTP SERIES HIGHLIGHTS

- Acting as a compact all-in-one vsmPanel client
- 10,4" touchscreen panel in desktop format that offers the full flexibility of vsmPanel without the need for any additional external PC workstation to drive the panel



#### TTP 10

10,4" capacitive touch-screen, Atom N450-CPU, Ethernet, solid aluminum-housing

### ENC 17 SERIES HIGHLIGHTS

- 17 incremental encoders with RGB-Backlight
- Connectable to all LBP surfaces for intuitive and precise parameter control



#### ENC 17

17 Encoders, RS422 / 1RU

# VSM Monitors

## UNDER MONITOR DISPLAYS (UMD)

### VSM UMD HIGHLIGHTS

- Graphical DOT display for source and tally information
- UMD layout is freely configurable
- Can also show timers, clocks, parameters and much more



#### UMD-SD 1/2 19"

80 x 7 pixels + 1 Line of red/green/yellow Tally RS422  
(Ethernet communication via SmartHub) / 1RU (9.5")



#### UMD-SD 19"

170 x 7 pixels + 1 Line of red/green/yellow Tally RS422  
(Ethernet communication via SmartHub) / 1RU



# VSM Interfaces

## SMARTHUB IP-TO-SERIAL INTERFACES

### SMARTHUB IP-TO-SERIAL HIGHLIGHTS

- Interfaces between Ethernet and RS422 / RS232
- Interface to connect the UMDs
- Interface to connect Automation Systems via serial



#### SmartHub 111

1 x RS422 + 1 x RS232 (configurable via vsmDiscover)  
Ethernet / 1RU



#### SmartHub 208

8 x RS422 (configurable via vsmDiscover)  
2 x Ethernet (1 x Ethernet per 4 RS422-ports) / 1RU



#### SmartHub 244

4x RS232 (DSub 9P) + 4x RS422 (RJ45) configurable via  
vsmDiscover, 2x Ethernet (1x Ethernet per 4 RS422-ports and 1x  
Ethernet per 4 RS422) / 1RU



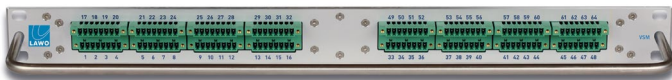
#### SmartHub 280

8x RS232 configurable via vsmDiscover  
2x Ethernet (1x Ethernet per 4 RS232-ports) / 1RU

### GP-I/O BOX INTERFACES

#### GPI / GPO / GPI/O HIGHLIGHTS

- Connection of physical GPI/Os to the VSM system
- Compact in size and light weight
- Quick and easy connector access GPI/Os are freely configurable via vsmStudio software



#### GPI 64

64 galvanically isolated TTL-compatible inputs  
1xEthernet, 1RU



#### GPO 64

64 dry relay-outputs, up to 250VAC/7A (1750VA)  
1xEthernet, 1RU



#### GPI/O 32

32 galvanically isolated TTL-compatible inputs  
32 dry relay-outputs, 1xEthernet, 1RU



#### GPO 64 analog

64 analog voltage outputs, 0-10 VDC  
1xEthernet, 1RU

## LTC SYNC INTERFACES

### LTC SERIES HIGHLIGHTS

- Time synchronization for our VSM Server in time critical environments using the Event Scheduler



#### LTC Time Sync Dual

2x LTC longitudinal timecode-audio-signal according to SMPTE 12M (-1/-2), 2 USB / 1RU



### SPECIFICATIONS

#### LBP 17

- Number of buttons: 17 LCD Buttons [E3] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x53 mm (1RUx19"x2.1")
- Weight: 1.0 kg (2.2 lb.)
- Power Consumption: < 4.2W @12VDC/0.35A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### LBP 16e

- Number of buttons: 16 LCD Buttons [E3] RGB-Backlight + 1 Encoder
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x68 mm (1RUx19"x2.7")
- Weight: 1.0 kg (2.2 lb.)
- Power Consumption: < 4.2W @12VDC/0.35A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### LBP 32-DT

- Number of buttons: 32 LCD Buttons [E3] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 84x256x141 mm (3.3"x10.1"x5.6")
- Weight: 1.0 kg (2.2 lb.)
- Power Consumption: < 6W @12VDC/0.5A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### LBP 31e-DT

- Number of buttons: 31 LCD Buttons [E3] RGB-Backlight + 1 Encoder
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 84x256x141 mm (3.3"x10.1"x5.6")
- Weight: 1.6 kg (3.5 lb.)
- Power Consumption: < 6W @12VDC/0.5A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### LBP 34

- Number of buttons: 34 LCD Buttons [E3] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 88x483x53 mm (2RUx19"x2.1")
- Weight: 1.0 kg (3.1 lb.)
- Power Consumption: < 6.5W @12VDC/0.54A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### LBP 33e

- Number of buttons: 33 LCD Buttons [E3] RGB-Backlight + 1 Encoder
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x68 mm (1RUx19"x2.7")
- Weight: 1.0 kg (3.1 lb.)
- Power Consumption: < 6.5W @12VDC/0.54A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### LBP 51

- Number of buttons: 51 LCD Buttons [E3] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 88x483x53 mm (2RUx19"x2.1")
- Weight: 1.7 kg (3.7 lb.)
- Power Consumption: < 8.5W @12VDC/0.71A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### LBP 50e

- Number of buttons: 50 LCD Buttons [E3] RGB-Backlight + 1 Encoder
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 88x483x68 mm (2RUx19"x2.7")
- Weight: 1.7 kg (3.7 lb.)
- Power Consumption: < 8.5W @12VDC/0.71A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **LBP 42**

- Number of buttons: 42 LCD Buttons [NKK] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x53 mm (1RUx19"x2.1")
- Weight: 1.3 kg (2.9 lb.)
- Power Consumption: < 7.1W @12VDC/0.59A max
- Working-Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **LBP 41e**

- Number of buttons: 42 LCD Buttons [NKK] RGB-Backlight + 1 Encoder
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x69 mm (1RUx19"x2.7")
- Weight: 1.3 kg (2.9 lb.)
- Power Consumption: < 7.1W @12VDC/0.59A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **LBP 84**

- Number of buttons: 84 LCD Buttons [NKK] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 88x483x57 mm (2RUx19"x2.2")
- Weight: 1.7 kg (3.7 lb.)
- Power Consumption: < 12.3W @12VDC/1.02A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **LBP 83e**

- Number of buttons: 83 LCD buttons [NKK] RGB-Backlight + 1 Encoder
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 88x483x71 mm (2RUx19"x2.8")
- Weight: 1.7 kg (3.7 lb.)
- Power Consumption: < 12.3W @12VDC/1.02A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **LBP 34V (VERTICAL)**

- Number of buttons: 34 LCD Buttons [E3] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 483x65x59 mm (19"x2.6"x2.3")
- Weight: 1.4 kg (3.1 lb.)
- Power Consumption: < 6.5W @12VDC/0.54A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **LBP 39V (VERTICAL)**

- Number of buttons: 39 LCD Buttons [E3] RGB-Backlight
- Options: Communication port, 1xEthernet
- Dimension (HxWxD): 356x92x59 mm (14"x3.6"x2.3")
- Weight: 1.3 kg (2.9 lb.)
- Power Consumption: < 7.2W @12VDC/0.6A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **LBP 51V (VERTICAL)**

- Number of buttons: 51 LCD Buttons [E3] RGB-Backlight
- Options: vsmSnap
- Communication port: 1xEthernet
- Dimension (HxWxD): 483x88x59 mm (19"x2RUx2.3")
- Weight: 1.7 kg (3.7 lb.)
- Power Consumption: < 8.5W @12VDC/0.71A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### **PBP 44**

- Number of buttons: 44 Rubber Buttons R/G-Backlight
- Communication port: 1xEthernet
- Dimension (HxWxD): 483x43,7x41,6 mm (19"x1RUx1.6")
- Weight: 0.7 kg (1.5 lb.)
- Power Consumption: < 7W @12VDC/0,58A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

# VSM

## SPECIFICATIONS

### SPECIFICATIONS

#### TTP 10

- Display: 10.4" TFT (1024x768) with ISP (85°/85°/85°/85°) and LED backlight (500 cd/m²); capacitive touch
- CPU Fanless Atom N450, 2GB RAM, 8 GB non-volatile memory
- OS: Windows 7 Embedded with write filter
- Communication port: 1xEthernet
- Dimension (HxWxD): 210x260x65mm (8.3"x10.2"x2.6") when folded down to 0 degrees including pedestal
- Weight: 3.2 kg (7.1 lb.)
- Power Consumption: <25W @12VDC/2.01A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### ENC 17

- Number of Encoder: 17 incremental encoder RGB-Backlight
- Communication port: RS422 communication to LBP-panel only
- Dimension (HxWxD): 44x483x67mm (1RUx19"x2.6")
- Weight: 1.0 kg (2.2 lb.)
- Power Consumption: 3.5W @12VDC/0.29A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### UMD-SD 19"

- Number of Pixel: 170x7 (X/Y) + 1 Line of red/green/yellow-Tally
- Communication port: RS422 (Ethernet via SmartHub)
- Dimension (HxWxD): 44x483x33mm (1RUx19"x1.3")
- Weight: 0.7 kg (1.5 lb.)
- Power Consumption: < 5.8W @12VDC/0.48A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### UMD-SD 1/2 19"

- Number of Pixel: 80x7 (X/Y) + 1 Line of red/green/yellow-Tally
- Communication port: RS422(Ethernet via SmartHub)
- Dimension (HxWxD): 44x260x33mm (1RUx9.5"x1.3")
- Weight: 0.4 kg (0.9 lb.)
- Power Consumption: < 3.1W @12VDC/0.26A max
- Working Environment: 0° to 50°C (+32° to +122°F) non-condensing humidity

#### SmartHub 111

- Number of serial ports: 1xRS422 + 1xRS232 configurable via vsmDiscover
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x50mm (1RUx19"x2.0")
- Weight: 0.8kg (1.8lb.)
- Power Consumption: < 2.3W @12VDC/0.19A max
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### SmartHub 208

- Number of serial ports: 8xRS422 configurable via vsmDiscover
- Communication port: 2xEthernet (1xEthernet per 4 RS422-ports)
- Dimension (HxWxD): 44x483x50mm (1RUx19"x2.0")
- Weight: 1.0kg (2.2lb.)
- Power Consumption: < 4.8W @12VDC/0.4A max per power-supply (2x)
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### SmartHub 244

- Number of serial ports: 4xRS232 (DSub 9P) + 4xRS422 (RJ45) configurable via vsmDiscover
- Communication port: 2xEthernet (1xEthernet per 4 RS422-ports and 1xEthernet per 4 RS422)
- Dimension (HxWxD): 44x483x50mm (1RUx19"x2.0")
- Weight: 1.0kg (2.2lb.)
- Power Consumption: < 4.8W @12VDC/0.4A max per power-supply (2x)
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### SmartHub 280

- Number of serial ports: 8xRS232 configurable via vsmDiscover
- Communication port: 2xEthernet (1xEthernet per 4 RS232-ports)
- Dimension (HxWxD): 44x483x50mm (1RUx19"x2.0")
- Weight: 1.0kg (2.2lb.)
- Power Consumption: < 4.8W @12VDC/0.4A max per power-supply (2x)
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity



#### **GPI 64**

- Number of ports: 64 galvanically isolated TTL-compatible inputs
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x127 mm (1RUx19"x5")
- Weight: 1.9 kg (4.2 lb.)
- Power Consumption: < 7.5W @12VDC/0.62A max
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### **GPO 64**

- Number of serial ports: 64 dry relay-outputs, up to 250VAC/7A (1750VA)
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x127 mm (1RUx19"x5")
- Weight: 2.3 kg (5.1 lb.)
- Power Consumption: < 22.7W @12VDC/1.89A max
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### **GPI/O 32**

- Number of serial ports: 32 galvanically isolated TTL-compatible inputs
- 32 dry relay-outputs
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x127 mm (1RUx19"x5")
- Weight: 2.1 kg (4.6 lb.)
- Power Consumption: < 15.1W @12VDC/1.26A max
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### **GPO 64 analog**

- Number of serial ports: 64 analog voltage outputs, 0-10 VDC
- Communication port: 1xEthernet
- Dimension (HxWxD): 44x483x127 mm (1RUx19"x5")
- Weight: 1.9 kg (4.2 lb.)
- Power Consumption: < 19W @12VDC/1.58A max
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### **LTC Time Sync Unit Dual**

- Number of ports: 1 x LTC longitudinal timecode-audio-signal
- according to SMPTE 12M (-1/-2)
- Communication port: 1xUSB
- Dimension (HxWxD): 44x483x127 mm (1RUx19"x5")
- Weight: 1.3 kg (2.9 lb.)
- Power Consumption: <2.1W @12VDC/0.17A max
- Working Environment: 0° to 60°C (+32° to +140°F) non-condensing humidity

#### **vsmServer**

- Windows Server 2008R2 or Windows Server 2012R2\*
- HP DL360p Gen8, CPU min. Xeon E5 2620, RAM min. 4GB
- RAID Controller min. Smart Array P222 with 256MB Cache
- HDD min. 100GB SATA or SAS

#### **vsmServer for small installations**

- Windows Server 2008R2 or Windows Server 2012R2\*
- HP DL320e Gen8 V2 (40cm depth), CPU min. Xeon E3 1220, RAM min. 4GB
- RAID Controller min. Smart Array P222 with 256MB Cache
- HDD min. 100GB SATA or SAS

#### **vsmPanel workstation**

- Windows7, Windows8 or higher
- CPU min. Intel Core i3 or higher (Intel Core i5 recommended)
- RAM min. 4GB
- Graphics min. Intel HD Graphics 4000 or higher

# VSM

## BROADCAST CONTROL AND MONITORING SYSTEM

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