Advanced Broadcast Control Systems

TALLYMAN

TALLYMAN SITS AT THE HEART OF ANY BROADCAST OPERATION, CONTROLLING CRITICAL BROADCAST EQUIPMENT, ALLOWING OPERATORS TO CONCENTRATE ON CREATING GREAT CONTENT.

TSL **Products**

Why choose TSL Products

TSL Products are world leaders. TallyMan, our Advanced Broadcast Control System is complimented with our award winning Audio Monitoring range, Power Management Systems and Integrated Display System (IDS). Our solutions are in operation twenty four hours a day throughout the world.

- Independent and universal system control
- Highly configurable, customisable and infinitely scalable
- Built on 25 years of control design and manufacture
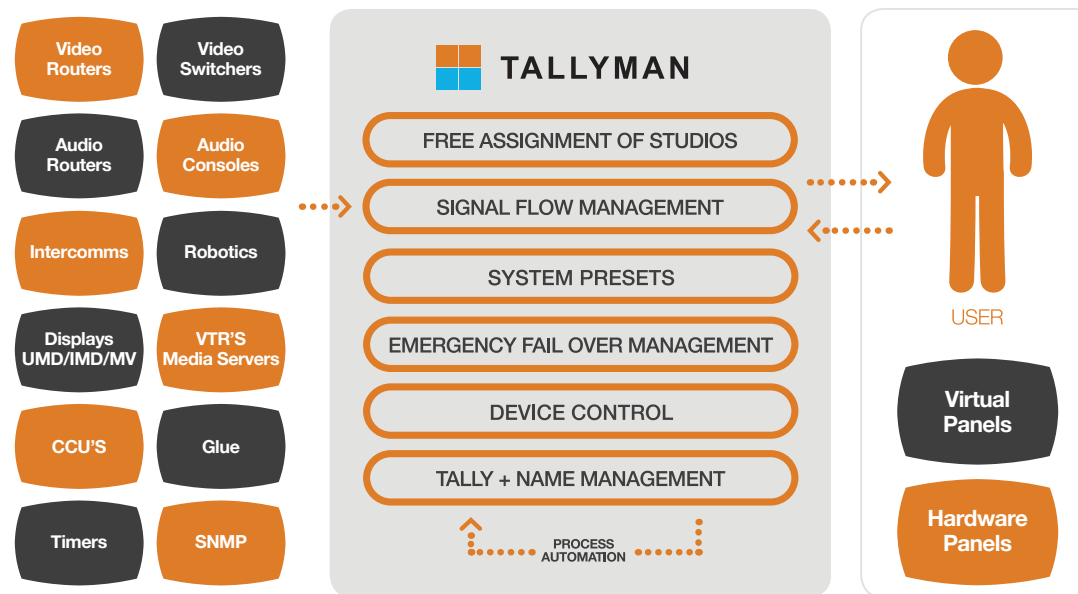- Unlimited interfacing across the broadcast chain

TSL's advanced broadcast control system allows you to deliver against three demands of the industry today:

- Seamless high quality
- High production values
- Cost control

Essential to achieving this is the ability to directly integrate with third party devices and easily manage a centralised control engine via an intuitive design interface.

Simplify workflow, improve useability and smooth operations throughout the entire broadcast chain.

| OUTSIDE BROADCAST | MASTER CONTROL | QUALITY CONTROL | PLAYOUT | TRANSMISSION | STUDIO | POST PRODUCTION SOUND | POST PRODUCTION EDIT | SATELLITE NEWS GATHERING |

A powerful system for any application

From simple routing, remote control by grouping multi-level actions into a single, simple control interface, you can do things which are much more rich, making your production more engaging.

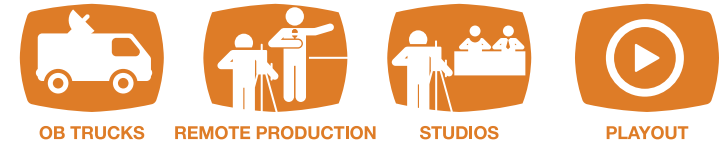**Powerful functions and complete third-party interface capability**
- Device control using a powerful built-in logic engine which is both flexible and efficient.
- Real-time signal flow to manage all content and process flows.
- Process automation that defines auto responses to system changes and reduces head count and training.
- Global name management with automatic import/export between devices.
- User-designed and built and tailored to workflows with total system control that reduces user error and provides real-time feedback.
- Distribute information via IP, serial and GPI to meet the capabilities of all equipment, new and existing.

Small and Large Facilities
- Customised to the requirements of users in all areas of the facility.
- Modular approach for critical data sharing whilst providing a unified redundancy system.
- Virtual panels communicate directly with any controller in a system.
- Remote via A/V over IP, carrying and returning feeds for monitoring and performing robotic camera control.

Remote Studios
- Complete virtual control of regional locations
- Touch screen control to:
  - Adjust lighting
  - Control camera position, pan, tilt and zoom
  - Automatically route talkback and production sounds to ear.
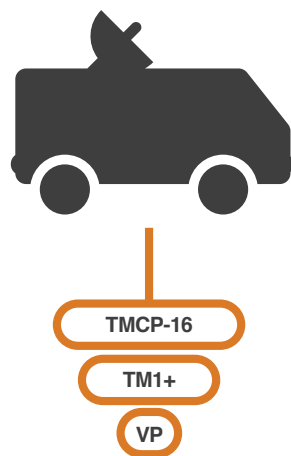 - Send videos and graphics to in-vision monitors

OB TRUCKS   REMOTE PRODUCTION   STUDIOS   PLAYOUT
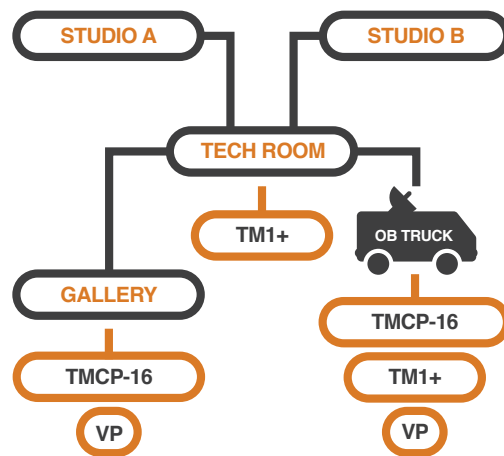
Outside Broadcast
Outside broadcast presents unique challenges. With the increased adoption of 4K and standardisation on 5.1 audio operators are working in an ever-changing environment that requires complete control and accurate information. TallyMan simplifies operations to make production faster, simpler and more efficient.
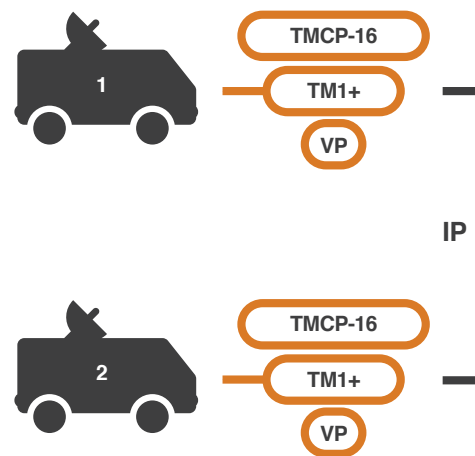
Intertruckability

Single Truck Event

TMCP-16
TM1+
VP

Facility Expansion

STUDIO A
STUDIO B
TECH ROOM
TM1+
OB TRUCK
GALLERY
TMCP-16
TMCP-16
VP
TM1+
VP

Multiple Truck Event

1
TMCP-16
TM1+
VP

IP

2
TMCP-16
TM1+
VP

Standalone truck
The TM1+ is the ideal system-in-a-box"

Dockable trucks
Maximise up-time and manage variable demand by simply docking trucks to larger broadcast facilities seamlessly as needed. Delegate control and information while minimising setup time.

InterTruckability
For larger events TallyMan systems quickly and simply interact to share all device information, managing names, control and tally across systems.

Signal patching is reduced as tielines become dynamic, naming problems are eliminated and logic patching is performed virtually.

DID YOU KNOW?

TallyMan allows you build relationships between routing paths, from simple audio or control follow video and pass through of control between devices to complete ganged signal routing.

Key Functions and Features

A TallyMan system typically interfaces with key broadcast equipment. Even very simple systems benefit form the broad feature set of TallyMan with its simple and fast configuration tools. Benefits include simple centralised management of names, signal flow and universal equipment control.

TallyMan acts as a control layer for multiple routing devices across a facility. It frees end users and system integrators to choose best of breed not at the facility level but for the particular applications of each area.

Functions

Control
• Multiple routers control, working with hybrid HD-SDI and 4K systems
• Control IP routing as it is introduced while retaining the essential requirements of broadcast operation
• Comms System
• Vision Switchers
• Media servers
• Multiviewers
• Cameras
• Robotic Cameras
• IR devices
• Displays
• Emergency changeover systems
• Power Managers
• Lighting Systems
• Custom SNMP, Serial, TCP and UDP interfaces
• Signal Grouping

Tally
• Multi-level
• Defined by origin and function
• Reacts to logic rules

Process automation
• The logic engine can be used to create an automation layer, to act as an intelligent controller, or to work within a wider automated system.
• Ideal for productions where the camera selection is rules-based.
• Simplify complex operations into a single button press
• Define automatic responses to system changes
• Define status dependant functionality
• Reduce head-count and training
• Free operators to concentrate on programming

Names
• Global name management
• Import and export between devices automatically

Custom user interfaces
• User designed and built - master set-ups can be saved and implemented with a single click
• Tailored to your workflow
• Control any element of your system
• Import images and fonts to meet your in-house style
• Real time feedback
• Seamlessly scalable both by increasing the number of routable sources and accommodating new functionality such as 4k.

Signal Flow Management

Increasingly complex broadcast workflow drive the requirement for detailed real-time signal flow management. TallyMan is a universal tool that will talk to a wide range of different manufactures and devices to gives a single point of entry for signal flow and routing control that simplifies workflows and brings about substantial operational cost savings.

Monitor and manage signals from various devices across your entire facility via IP, serial and GPI. TallyMan keeps track of your signals and allows you to manipulate the flow and dynamically update names and mnemonics.
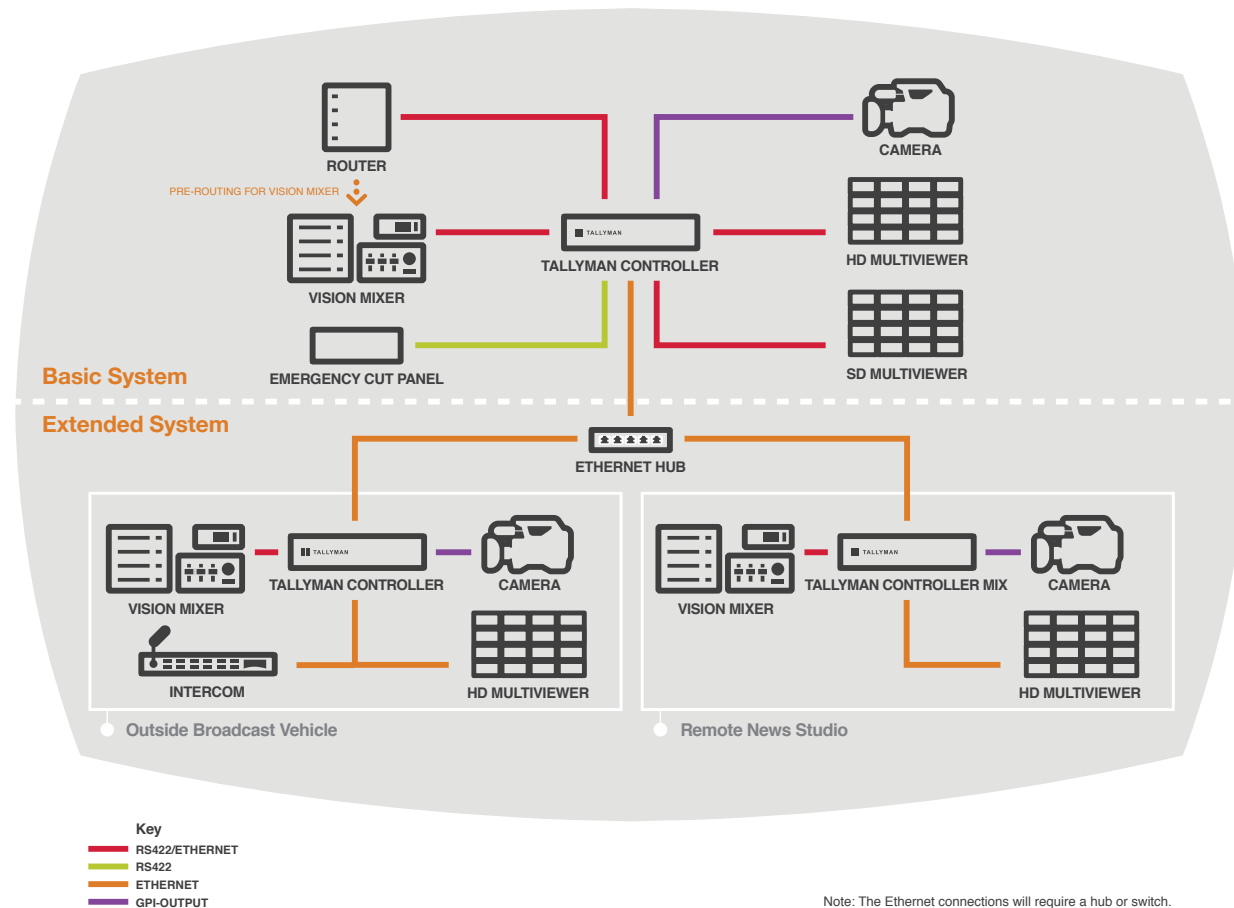
Control
- Automatic
- Simple manual activation
- Simple X-Y routing
- Grouped signal routing, 4k, SD follow HD, Audifollow video
- Other devices
  - Media servers
  - Robotic cameras
  - Comms
  - Set top boxes
  - Timers
- Patching
- Custom I/O flow and dynamically update names and mnemonics.

Tally
- Tally any bus
- Filter by origin and function
- Powerful logic engine.

Names and mnemonics
- Global name management
- Auto import/export between devices
- Single point of entry.
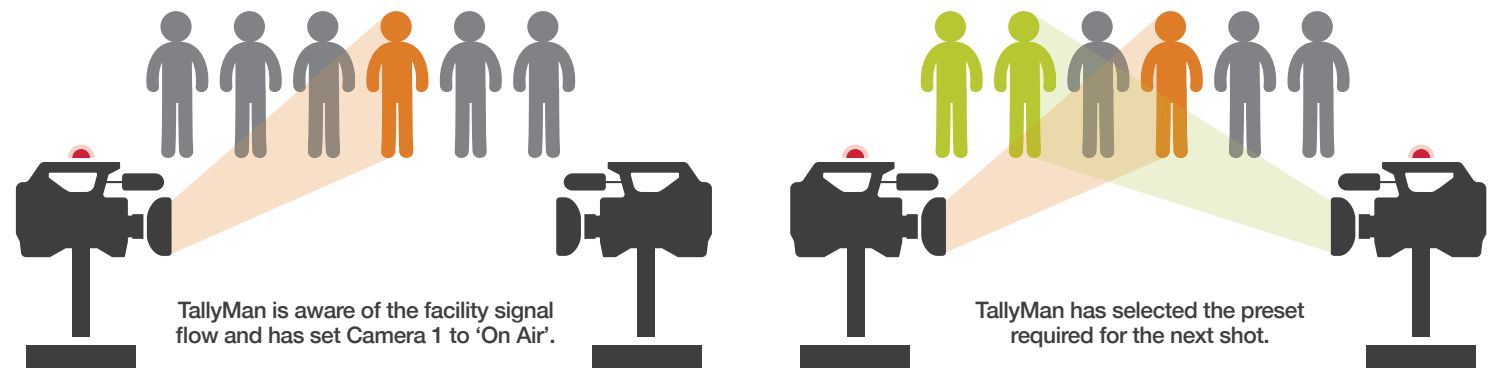
Complete signal flow management across equipment from different vendors is available on TallyMan's customised Virtual Panels.

ROUTER

PRE-ROUTING FOR VISION MIXER

VISION MIXER

EMERGENCY CUT PANEL

TALLYMAN CONTROLLER

CAMERA

HD MULTIVIEWER

SD MULTIVIEWER

Basic System

Extended System

ETHERNET HUB

VISION MIXER

TALLYMAN CONTROLLER

CAMERA

INTERCOM

HD MULTIVIEWER

Outside Broadcast Vehicle

VISION MIXER

TALLYMAN CONTROLLER MIX

CAMERA

HD MULTIVIEWER

Remote News Studio

Key
- RS422/ETHERNET
- RS422
- ETHERNET
- GPI-OUTPUT

Note: The Ethernet connections will require a hub or switch.

Process Automation

Systems such as robotic camera systems and routers with logic control capabilities exist to make broadcast workflows more efficient. But whilst they provide a certain level of efficiency, they still lack vital component cooperation.

TallyMan takes the efficiency found in automated systems and multiplies it to dramatically reduce production costs. While robotic cameras reduce head-count and training, they still fit within multi-operator, multi-step workflows. When TallyMan fully integrates into the workflow, it removes many of the remaining steps to free operators from repetitive and time consuming tasks.

TallyMan is aware of the facility signal flow and has set Camera 1 to 'On Air'.

TallyMan has selected the preset required for the next shot.

This scenario represents a fully automated studio environment based around two robotic cameras which are completely controlled by TallyMan. The TallyMan system will control the pan, tilt and zoom of the robotic cameras, switch the relevant camera to air by controlling and using a router's extensive logic engine to ensure a camera which is on-air isn't moved.

When the next shot is called, TallyMan is aware that Camera 1 is on air and automatically fails over to the required preset on Camera 2. The next shot is made available without interrupting the current transmission. Additionally, TallyMan queues this shot on the multiviewer and will automatically fade up the required mic on the audio console, should this shot be chosen.
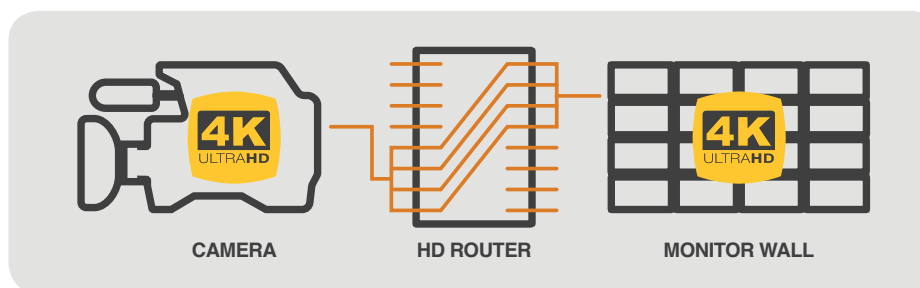
Hybrid 4K / HD Systems

TallyMan turns existing HD systems into intelligent hybrid HD/4K systems that change operation automatically with no user input.

TallyMan can control multiple devices simultaneously from different vendors in broadcast infrastructures that include one or more routers for audio, video and control switching; ranging from SD to 4K and beyond, analogue and digital audio including MADI, RS485, fibre and more.

In the case of 4K in an HD infrastructure, multiple signals - 4 HD-SDI - must be routed around the facility in unison. TallyMan will automatically route these signals as one and provide users with familiar 1:1 X-Y control, completely eliminating the learning curve with no change to normal day to day operations.

TallyMan is already in use worldwide. It allows broadcasters to maximise their existing infrastructure, hire trucks and facilities and become truly multipurpose without complex reconfiguration. This saves a huge amount of time on every project and maximises available resources with minimal investment.

CAMERA   HD ROUTER   MONITOR WALL

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A complete control system in a box

TallyMan controllers are cost-effective and interwork without problems, making it practical to design systems comfortably, with a logical layout of hardware, simplicity of configuration files and a high level of resilience.

TM1 MK2

Ideal for small standard studio installations with multiple I/O on the rear panel for direct integration with local equipment.

Features:
- 1RU unit
- Dual Gigabit Ethernet
- Four RS422 ports
- 64 user configurable parallel circuits
    - Inputs: contacts to ground
    - Outputs: Open collector
- Solid state memory
- TallyMan software included

TM1 Plus MK2

Featuring dual redundant hot swappable power supplies and isolated relay outputs and specifically designed for environments where grounding and power is uncertain, ideal for remote production.

Features:
- 1RU unit
- Dual Gigabit Ethernet
- Four RS422 ports
- 64 user configurable parallel circuits
    - Inputs: contacts to ground
    - Outputs: Open collector
- Additional outputs: 32 Isolated Relays
- Dual redundant hot swappable power supplies
- Solid state memory
- TallyMan software included

Front Panel

TM1 MK2 rear panel

TM1 Plus MK2 rear panel

Scaling and Resilience

For most broadcasters, mission critical systems have to be resilient. Single points of failure are generally considered too high a risk. TallyMan provides a platform for failovers, and in turn its architecture allows you to build resilient control structures.
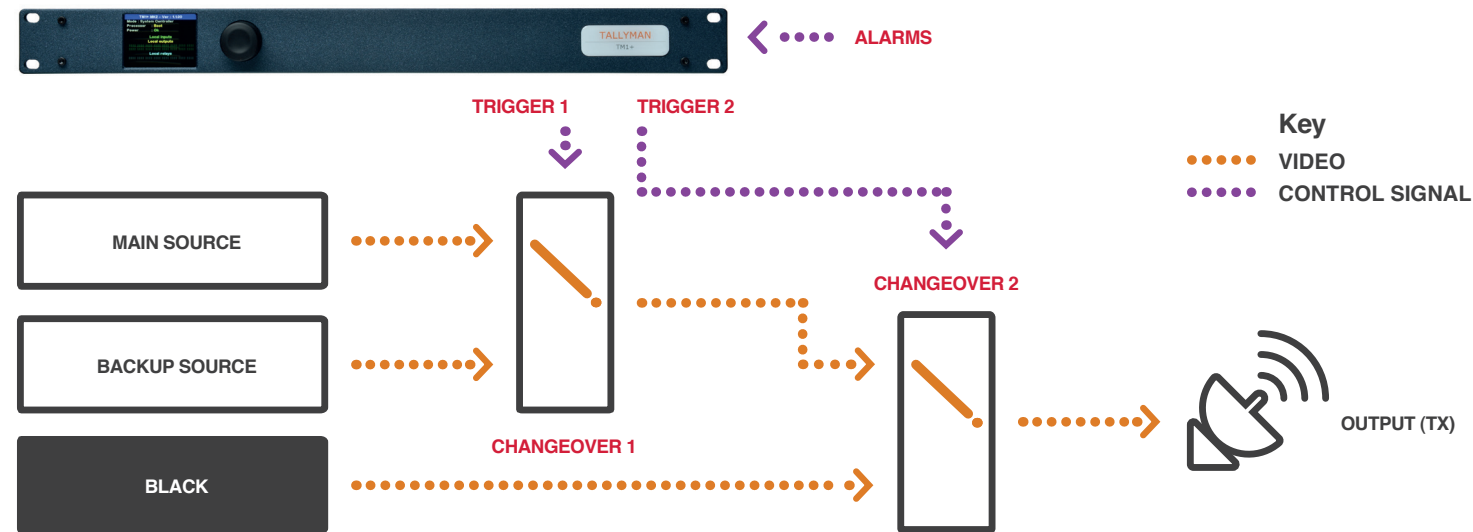
Emergency Changeover

A TallyMan system can support a large number of devices. Multiple hardware and virtual panels across multiple system controllers may intercommunicate and cooperate.

All devices communicate on a system level, so if any part of the installation were to fail, then any other part of the facility could take over, e.g.. if a production switcher went down a switcher in another control

room could instantly take over, with TallyMan not only setting up all the routing but ensuring that the source names appeared in the right place on the appropriate buttons.

Systems engineers can design any level of resilience because the architecture allows multiple TallyMan controllers to work together, and thus any unit can pick up anything else.

ALARMS

TRIGGER 1   TRIGGER 2

Key
VIDEO
CONTROL SIGNAL

MAIN SOURCE

CHANGEOVER 2

BACKUP SOURCE

CHANGEOVER 1

OUTPUT (TX)

BLACK

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Virtual Panels – Gain unlimited control of your broadcast system

Whether the application is in production, remote broadcasting or playout, bringing complex systems under a single point of control minimises operational complexity and ensures staff deliver high quality outputs with minimal risk of error.

The easiest way to achieve this is by using virtual panels to:

• Maintain clear and intuitive actions for the operator
• Present just the controls they need
• Customise design for best fit individual processes
• Create common interfaces

The essence of a unified control system is to make it easy and error-free to operate, focus training and optimise the work space. The ability to design virtual control panels to do what is required and no more is critical.

FlashBoard
– Screen based information and display

Integrating seamlessly with TallyMan, third party control systems or capable of independent operation, FlashBoard delivers critical workflow information visually at the point of use.

It drives multiple displays and screens can be designed quickly using the drag and drop functionality in the TallyMan virtual panel software for display in monitor walls or distributed wirelessly to tablets.

To system can display
• Production timers
• World Clocks
• Multiple Time Zones
• Branded Media
• Status and alarms
• On-Air Indication
• Dynamic studio information

Hardware Panels

Control Panels

The TallyMan Control Panels provide a customisable user interface for the TallyMan Control System. Panels can initiate any function available within the system including, but not limited to:
Router control - including the control of different manufacturers routers on a single panel - Tally activation, command triggers to 3rd party devices such as "next clip" on a server and shot recall on robotic cameras as well as display of real time system data.

Each button is backlit with tricolour LEDs allowing a large range of display colours coupled with an LCD screen to display up to 16 characters of text or a bitmap image, this allows for full customisation of each panel as desired by operators.

Under Monitor Displays

The TSL Products' range of under monitor displays (UMD) complements the Control Systems range. They offer clear, bright (but dimmable) mnemonics with comprehensive tally indications.

Dynamic Displays

D8C and D16C displays use tri-colour display blocks 17.5mm high. The D8C display needs to be mounted onto a panel, the dual eight-character (DD8C) and 16-character displays (D16C) are built into a standard 19" case. The separately addressable tally LEDs either side of the display blocks are also tri-colour.

TMCP-16

TMCP-32

TMCP-48

UMD-D8C-DUAL

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Expansion units

ESP-1R+
This expansion unit provides cost-effective and simple expansion of any TallyMan system allowing many more GPI relay outputs, GPI inputs and RS422 control interfaces to be added to your system.

32 parallel tallies in (contacts to the system 0V), 32 open collector outputs with a further 64 isolated relay outputs are supplied. The unit includes a RS422 serial D9 connector allowing convenient local access to the TallyMan system for third party equipment.
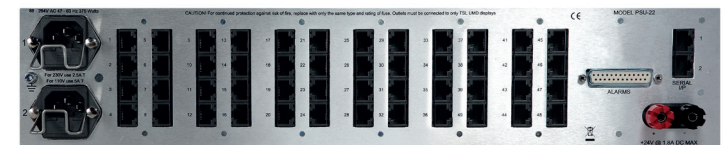
PSU22/1 and PSU22/2
To simplify system wiring, TSL Products UMD's provide 24V DC power through the CAT5 twisted cable, meaning each UMD only needs one cable feed.

However, when many UMD's are required, the power loading on a single TallyMan controller can be very high and long cable runs can reduce the voltage and power supplied. PSU22 provides a cost effective solution to maintaining localised power supply for your UMD's.

PSU22/1 is a 19inch 2RU unit which provides 240 watts of power, mnemonic and serial tally distribution for up to a maximum of the equivalent of 96 eight-character displays.

The unit may be ordered or upgraded with a second 240 watt PSU which will provide 100% redundancy in the event of an internal power supply module failure. This upgrade is a straightforward plug-in upgrade as the frame is fully wired to accept a second psu.

Interfacing

New protocols are added to TallyMan as they become available.

TallyMan interfaces to all known switchers, routers and multiviewers and is supplied with all the protocols to interface with the following list and beyond. This list is not definitive.

Interface	Protocol Type in use
Alpermann	Alpermann Timers
Blackmagic	Blackmagic
Clearcom	Clearcom (HCI)
DHD Audio	V5,52/XR, 52/XS, XC, XD
Evertz/Quartz	Symphony, Quartz protocol
EVS	Media player
ForA	ForA MFR/HVS
Grass Valley	Kahuna, GVG Native (SMS7000) GVG200, GVG2100, GVG4000, Kalypso, Zodiac, K-Frame Ethernet, ACOS V2, Kayenne, Acappella, Jupiter ES Switch, NP0017 (NV9000), CRSerial.
Harris/Leitch	LRC, Z-Protocol
InfraRed	Multiple
Kramer	2000
Nevion	VikinX
NVision	DCP, NV5100MC, NP0017 (NV9000)
Omneon	Mediaplayer
Panasonic	Panasonic HS6000
Pesa	USP
ProVideo RS1616	RS1616
Ross	Carbonite
Sierra Serial Xpt	Serial Xpt
Sigma	MRX
Snell & Wilcox/Probel	Tally Protocol, Kahuna-Kalypso Protocol, SWP02, SWP08, K360
SNMP	V1
Sony	MVS-X
Talia	ProScan, EOS
Telecast	Prosan
Telemetric	Control
Thomson	BTS ASCII 9000 series, DD1020/30, Kayak DD series, Multicast tally contribution, DD35 ACOS
Utah	RCP-1
Vinten Redamec	Control

DID YOU KNOW?

Regardless of vendor interface, users always know what they are doing because every source and destination has a real name, and that name is consistently applied throughout the system.

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Contact our international team

TSL Products operates globally

For further details about our product range and where to buy please visit:

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TSL Sales: +44 (0)1628 564 610
E-mail: enquiries@tslproducts.com

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