

# AMPEX



## VS600 Production Video Switcher

*A solid state, modularized, digital  
remote-controlled switcher*

### Features

- Clamping Amplifier on each input.
- Accommodates composite or noncomposite input signals.
- Individual, plug-in, crosspoint modules use fast, reliable solid state circuit switch.
- Plug-in modular matrix frame with simplified printed wiring interconnect.
- Broadcast quality components and performance with transient-free switching.
- Spare clamped output from each bus output amplifier.
- Binary coded DTL control logic simplifies remote control panel to switch matrix connections to a few wires.
- Automatic transition dissolver provides preset to program line switch ("take-bar") in four rates of fading.
- Pushbutton choice of transition, including fade to and through black.
- Optional computer control of video switcher.

### Description

The Ampex VS600 solid state vertical interval switching system utilizes the most advanced integrated circuit (IC) components and digital logic control to provide top performance and reliability in the live studio, master control, transmitter or network control, and mobile van. It is available as a manual fader arm switcher or as an automated take-bar or preset type switcher for easy integration into a computer controlled facility.

The system consists of a compact, rack-mount type chassis and includes the modularized switch matrix and control

logic, amplifiers, tally control and power supply. Unique to the Ampex design is a serially-coded control system which requires only a single, small connecting cable between the rack frames and the control panel. The control panel can be remotely located as far as 1500 feet away and it contains high-quality, smooth action, illuminated reed switches. Standard and custom systems include pre-wired rack frames and control panel.

### Switcher Matrix

The Ampex switcher incorporates an 8 input, well-shielded video crosspoint frame (8X1) which accommodates up to 8 individual plug-in crosspoint modules. Ten of these crosspoint frames mount in a single 7-inch rack frame, making up to an 8 input by 10 output configuration. Unused crosspoint can be deleted; additional crosspoints may be easily added later because of this modular concept. Any configuration of inputs and outputs can be provided.

Each crosspoint module contains a newly developed solid state video switch that produces a transient-free cross switch. Associated control components time an overlap to occur in the vertical interval. It further matches the fixed dc level to the black level of the video signal so that the dc output does not change, thus assuring perfect signal switching.

The switcher matrix frame accommodates up to eight clamped input amplifiers. The input amplifiers also serve as the sync mixer when non-composite signals are to be accommodated. Switcher output amplifiers are housed in a separate rack frame (3 $\frac{1}{2}$ " ). One output frame will accommodate up to ten individual plug-in amplifier modules. Each module is a clamped amplifier with two isolated 75 ohm outputs. Printed wiring inter-connections

**Complete systems for closed-circuit and broadcast television**

combined with modularized plug-in techniques simplify system assembly and expansion while assuring highest quality performance.

## Switcher Logic

Integrated circuit (IC) Diode Transistor Logic (DTL) components are used to encode and decode analog signals from the momentary contact pushbutton selector switches on the control panel into a binary format. Discrete, solid-state components serve as tally and lamp indicator drivers.

High-quality IC circuits provide many advantages for control functions. They are small, reliable, noiseless, immune to dust and require no routine maintenance. Control components are mounted on plug-in printed circuit cards that insert into protective mounting frames.

The Ampex digital control logic requires only a few interconnecting wires between the control panel and the rack-mounted video equipment and is easily adaptable to computer control.

## Transition Control

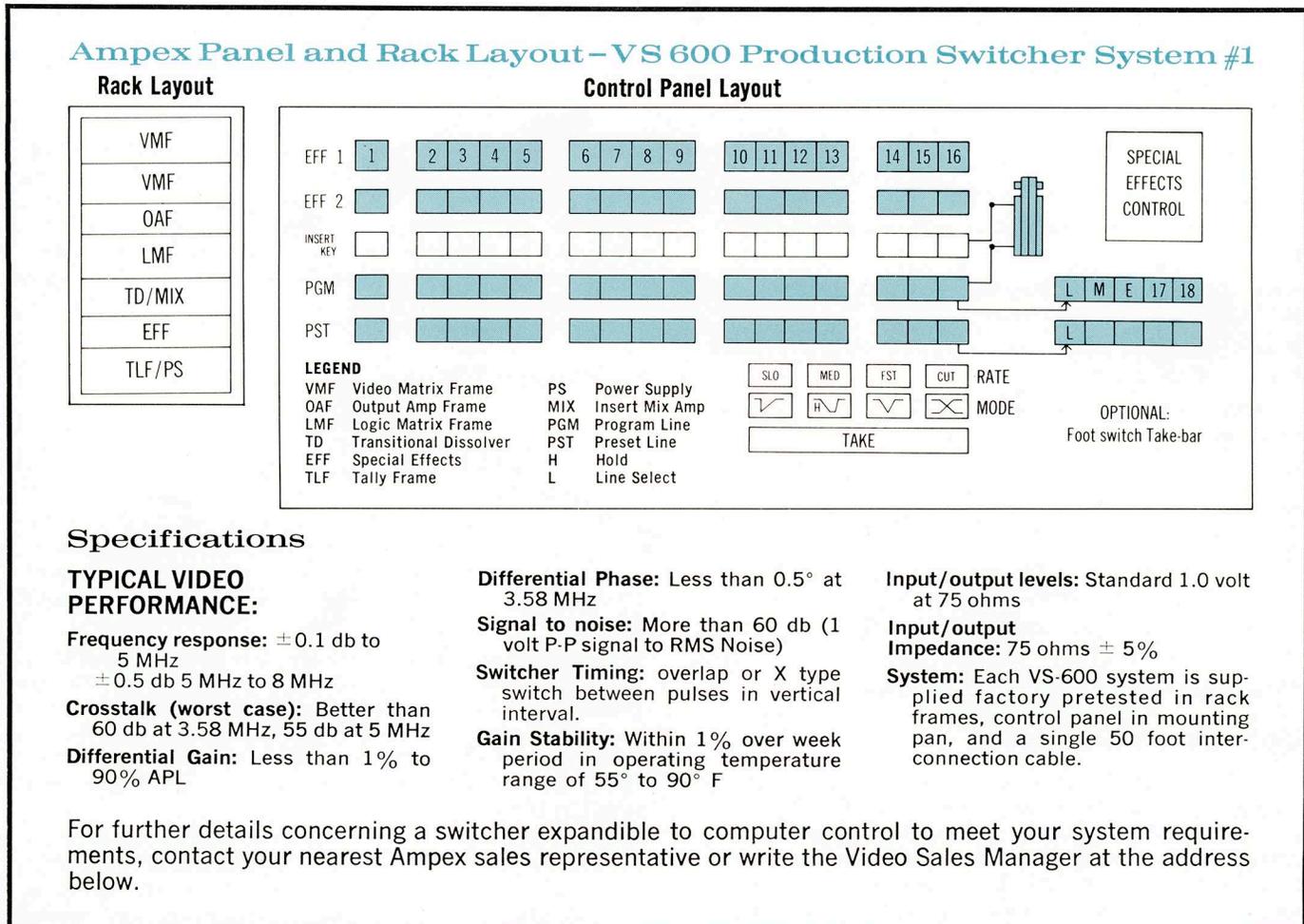
Ampex provides varied signal transition control with mixers and generators for manual and automatic mixing as well as special effects. Included in a basic Ampex production switcher is a transition dissolver-amplifier that provides selection of type and rate of transition and executes it automatically by adding logic modules to the fader amplifier. Built into the fader is the equivalent to a 2X1 switcher that provides preset to air and take-bar logic. Pushbutton choice can be made of four rates of transition, e.g., 4 frame "soft-cut," 1/2 second, 1 second, and 2 second fades and mixes.

Another feature available for the more sophisticated technical director is an automatically programmed choice of the types of transition. Pushbutton selection is provided for standard lap dissolve as well as various types of fade to and through black.

An insert amplifier for keying-in titles as well as other special effects is also available to provide a variety of programmed patterns, wipes and inserts.

## Switcher Control Panel and Video Functional Diagram

A typical Ampex control panel and rack layout supplied on a standard or custom basis is shown.



## Specifications

### TYPICAL VIDEO PERFORMANCE:

**Frequency response:** ±0.1 db to 5 MHz  
±0.5 db 5 MHz to 8 MHz

**Crosstalk (worst case):** Better than 60 db at 3.58 MHz, 55 db at 5 MHz

**Differential Gain:** Less than 1% to 90% APL

**Differential Phase:** Less than 0.5° at 3.58 MHz

**Signal to noise:** More than 60 db (1 volt P-P signal to RMS Noise)

**Switcher Timing:** overlap or X type switch between pulses in vertical interval.

**Gain Stability:** Within 1% over week period in operating temperature range of 55° to 90° F

**Input/output levels:** Standard 1.0 volt at 75 ohms

**Input/output Impedance:** 75 ohms ± 5%

**System:** Each VS-600 system is supplied factory pretested in rack frames, control panel in mounting pan, and a single 50 foot inter-connection cable.

For further details concerning a switcher expandible to computer control to meet your system requirements, contact your nearest Ampex sales representative or write the Video Sales Manager at the address below.

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