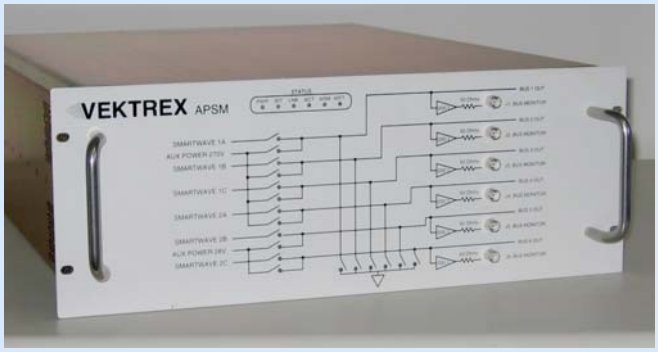
APS1000 Auxiliary Power Switch

APS1000:

- Two mainframes: 6U, 6 card; 2U, 3 card
- Two switch types:
  - DC: 0 to 300V peak
  - AC: -225V to +250V peak
- 20A continuous, 450A peak
- Switch between two programmable sources or ground
- Programmable sequences
  - 50uS steps
  - 30-100nS transitions
- Ethernet control, LabVIEW driver
- Voltage and current monitor outputs



APS1000 6U Configuration

Overview

The APS1000 is a fast-waveform, semiconductor power switch that is used in conjunction with standard programmable power sources to rigorously test avionics and telecommunications equipment at the box or system level. It produces fast edges to support compliance testing against new standards and to allow discovery of latent power interface design weaknesses with simulated power turn-on, power interrupts, surges, bus transfer scenarios and more.

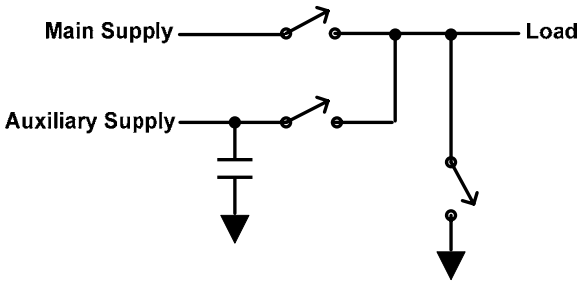


Figure 1 Switch Topology

Operation

The APS1000 mainframe can contain from one to three switches. The switch topology is shown in figure 1. Each switch accepts external power from two programmable sources: a high-bandwidth AC or DC power source and a low-bandwidth DC auxiliary supply. The switch routes these power sources to the UUT under software sequence control. All switch actions are break-before-make. To support load discharge, the capability to ground UUT power input is also provided.

Applications

- Precise voltage pulses
- Current pulsing
- Power interrupt ride-through
- Rapid load switching
- Avionics test
- Telecommunications test
- Pre-compliance testing
- Airbus 380 and JSF avionics test

VEKTREX

APS1000 Auxiliary Power Switch

Easy To Use

The APS1000's switches provide clean, high-speed transitions at the UUT and include compensation and built-in spike control to suppress transients and ringing caused by cable inductance. This design feature allows use of simple twisted pair wiring to connect the APS1000 to the UUT. The APS1000 also includes optional buffered, attenuated voltage and current monitor outputs that allow voltage and current waveforms to be easily monitored.

Specifications

Mainframe Specifications	
Types:	2U, 3 slot or 6U 6 slot
Power:	AC 115V +/-20V AC,50-60 Hz , 25W typical
Channels:	2U: up to 3 6U: up to 6
Size:	2U: 24.5" x 19" x 3.5" 6U: 23.75"" x 19" x 6.75"
Weight:	2U: 27lbs 6U: 40lbs
Mounting:	Rack or table top with feet
Front panel:	Includes switch schematic with LED position indicators
Switch Specifications	
Types:	DC: 0 to 300V peak AC: -225V to +250V peak
Construction:	Semiconductor power switch
Current:	20A continuous, 450A peak (25mS)
On resistance:	Path 1: 0.100 ohms max Path 2: 0.050 ohms max Path 3: 0.050 ohms max
Crosstalk:	-42dB
Rise time (typical):	Path 1: under 1uS Path 2: 30nS to 50V, 100nS to 300V typical
Internal capacitance (path 2):	DC: 141uF +/- 20% AC: 47uF +/- 20%

Switch Specifications, continued	
Spike protection limit:	DC: 300V AC: +300, - 250V
Sequence Engine/Switch Timing	
Step types:	Transitions, waits, loops, and external triggers
Max steps:	128
Timing accuracy:	+/- 700nS
Minimum step time:	50uS
Maximum step time:	1.5S
Trigger:	Hardware or software, 10uS latency
Switch to switch skew:	500nS maximum
Control:	Ethernet w/LabVIEW driver
Monitor Outputs	
Parameters monitored:	Voltage, Current (optional)
Scale:	Voltage: 1V=100V, Current: 1V=100A
Range:	Voltage: +/- 600V, Current: +/- 400A
Type:	Protected, buffered, 50 ohm source terminated
Connector:	BNC
Accuracy:	1% into 50 ohms, typically 0.2% into 1M
Bandwidth:	Voltage: DC –5MHz Current: DC -650kHz

VEKTREX

For information see www.vektrex.com
Contact: Melissa Ford
Phone: (858)558-8282 x6
Melissa@vektrex.com