SWITCH SYSTEMS

Keithley provides a wide array of high integrity switch systems to address the need for switching DC, RF, microwave, and digital I/O signals, whether in matrix, multiplexer, or a combination of configurations. Within our product portfolio you will also find data acquisition systems and digital multimeters with switching options.

	SERIES 3700A*	SYSTEM 46 /46T	707B / 708B
Max Channels / Crosspoints	576 / 2688	32	576 / 96
Card Slots	6	Not applicable	6 / 1
Unique optional card capabilities	High density switching, automatic CJC, long-life switching, FET switching	Not applicable	7072-HV provides 1kV and low current
Interface	GPIB, LAN (LXI), USB-TMC, TSP-Link® Channel Expansion Bus	GPIB	GPIB, LAN (LXI), ACS software, 4200-SCS KTEI software

* Series 3700A Switch Systems are found in this catalog under the Data Acquisition product category

CHOOSING YOUR SWITCH SYSTEMS

The most common selection criteria to help you choose the appropriate switch mainframe for your application.

❶ Multiplex Switching

Multiplex switching can be used to connect one instrument to multiple devices (1:N) or multiple instruments to a single device (N:1). Multiplex switching permits multiple simultaneous connections, and sequential or non-sequential switch closures.

❷ Matrix Switching

The matrix switch configuration is the most versatile because it can connect multiple inputs to multiple outputs. A matrix is useful when connections must be made between several signal sources and a multi-pin device, such as an integrated circuit or resistor network.

❸ Isolated Switch Configurations

The isolated, or independent, switch configuration consists of individual relays, often with multiple poles, with no connections between relays. Isolated relays are not connected to any other circuit, so the addition of external wiring makes them suitable for building very flexible and unique combinations of input/output configurations. Isolated relays are commonly used in power and control applications to open and close different parts of a circuit that are at substantially different voltage levels.

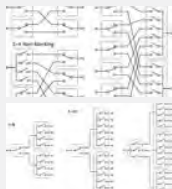## SWITCH SYSTEMS

System 46 RF Microwave Switch System

Both terminated and unterminated versions of the S46 Switch System are available for testing devices such as cellular and cordless phones, specialized mobile radios, base stations, and RF components, including RFICs. Series 2700 data acquisition systems also offer RF/microwave switch options.

MODEL	S46 (UNTERMINATED)	S46T (TERMINATED)
Max. Channels or Crosspoints per Chassis	Up to 32 RF/microwave chs	Up to 32 RF/microwave chs
Frequency Ranges	Up to 40 GHz	Up to 26.5 GHz
Relays	Up to 8 unterminated SPDT coaxial microwave relays and 4 unterminated multi-pole coaxial microwave relays	Up to 8 terminated or unterminated SPDT coaxial microwave relays and 4 terminated or unterminated multi-pole coaxial microwave relays

- Compact RF/microwave switching system only 2U high
- Built-in contact closure counter to monitor switch cycles
- Standard configuration allows up to 32 channels of switching
- Simple control with built-in GPIB/IEEE-488 interface bus
- Channel characterization (S-parameter) data storage

- Maximum Configuration: (8) – Unterminated (S46) or Terminated (S46T) SPDT relays.

- Maximum Configuration: (4) – Unterminated (S46) or Terminated (S46T) multi-pole relays (SP4T, SP6T).

SHIPS WITH PRODUCT
Power Cord
Instruction Manual
Rack Mount Kit

LEARN MORE ⬙ Download "Configuring an Optimal RF/ Microwave Switch System" Application Note.

Semiconductor Switch Matrix Mainframes

The 707B/708B are specifically designed for semiconductor lab and production test environments, delivering ultra low current switching performance using standard triax connectors and cables. For smaller test systems, the 708B supports a single 8×12 switch card. For larger systems, the 707B can accommodate up to six 8×12 cards.

MODEL	7072	7072-HV	7174A	7073
Max. Voltage/Current	200 V / 1 A	1300 V / 1 A	200 V / 2 A	200 V / 1 A
Max. Offset Current	<1 pA	<1 pA	<100 fA	<200 pA
Rec. Frequency	15 MHz	4 MHz	30 MHz	30 MHz
Connection Type	3-lug triax	3-lug triax	3-lug triax	BNC

- Remote and manual programming support
- Integrates seamlessly with the Model 4200A-SCS and Series 2600B SourceMeter SMU instruments
- Stores hundreds of switching configurations and channel patterns
- LXI Class C interface supports remote programming and control
- 14 bits of digital I/O
- Series 2600B SMUs have an on-board test script processor (TSP) that executes test scripts and controls the switch matrix via the TSPLink.
- The 707B and 708B support a family of matrices designed specifically for low-level semiconductor device testing.

SHIPS WITH PRODUCT
User Documentation
Test Script Builder Software (available at www.tek.com)
CA-180-4A: CAT 5 Ethernet Crossover Cable, 1 m (3.3 ft)
CA-179-2A: CAT 5 Ethernet Cable, 3 m (10 ft)
CO-7: Line Cord
Rear Fixed Rack Mount Hardware (707B only)

RECOMMENDED ACCESSORIES
CA-126-5A: 25-pin Female Digital I/O to 25-pin Male Cable, 3 m (10 ft)
2600-TLINK: Digital I/O to Trigger Link Cable, 1 m (3.3 ft)
4299-6: Universal Full Rack Mount Kit (for 708B)
7007-1: Double-shielded GPIB Cable, 1 m (3.3 ft)
7007-2: Double-shielded GPIB Cable, 2 m (6.6 ft)
7072: Semiconductor Matrix Card
7072-HV: High Voltage Semiconductor Matrix Card
7072-TRT: Triax Fastening Tool
7079: Slide Rack Mount Kit (for 707B)
7173-50: High Frequency, 2-pole, 4×12 Matrix Card
7174A: Low Current Matrix Card

RECOMMENDED SERVICE
R3: 3-year Extended Warranty
R5: 5-year Extended Warranty
C3: Calibration Service 3 Years
C5: Calibration Service 5 Years
R3DW: Repair Service Coverage 3 Years
R5DW: Repair Service Coverage 5 Years:

LEARN MORE ⬙ Download "Designing a High Throughput Switch System for Semiconductor Measurements" Application Note.

TEK.COM/SWITCHING-AND-DATA-ACQUISITION-SYSTEMS/RF-MICROWAVE-SWITCHING

TEK.COM/SEMICONDUCTOR-TEST-SYSTEMS/700-SERIES-SEMICONDUCTOR-SWITCHING-SYSTEMS

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