# 708A

# Switching Matrix Mainframe

## Single Slot with Fixed Rack Kit

Does not include the 7072-HV card shown

- Optimized for industrial production testing
- Requires just 3½″ of rack space
- Low heat producing design — no vent holes or fan needed
- Card accessible from either front or rear panel
- Front panel relay status display
- "One touch" programming
- Control up to 96 channels of 2-pole switching (expandable to 480)
- Compatible with a wide range of switch cards

The high-density single-slot Model 708A Switching Matrix builds upon the strengths of the original Model 708 to offer even greater capabilities for production testing in industrial environments. For example, the Model 708A requires only 3½ inches of vertical space in a standard 19-inch rack, so it's easy to fit into virtually any testing setup.

The Model 708A is compatible with all existing DC and RF switch cards for the original Model 707 and 708 switch mainframes. This card line offers both general-purpose and application-specific cards for use in semiconductor and telecommunications testing. There's even a Universal Adapter Card that provides access to the digital and analog backplanes, as well as a prototyping area for custom circuit designs. The Model 708A can control up to 96 channels (expandable to 480) from the front panel to simplify test development. Sixteen channels of digital I/O allow the operator to control and read-back the state of other equipment in the production test system.

### Optimized for Industrial Production Testing Environments

The Model 708A has been specifically engineered so that it does not require ventilation holes or an internal fan. This design makes the 708A ideal for automated production test applications in harsh industrial environments. Dust and other contaminants are sealed outside the enclosure, minimizing the potential for equipment failures. Eliminating the fan also makes the 708A suitable for cleanroom applications.

In many production test applications, it's desirable to locate the switching matrix as close to the device under test as possible. With the 708A, test engineers have the option to install the switching card through the rear panel or through the front panel, which can simplify connections and shorten the amount of wiring required. This also makes maintenance easier because it offers access to the card and connections from the front of the rack.

### APPLICATIONS

- Production testing of a wide range of electronic components
- Production testing on radio communication products such as mobile radios, cellular phones, etc.
- Semiconductor device characterization

## Ordering Information

**708A Switching Matrix**

**This product is available with an Extended Warranty.**

**Accessories Supplied:**
Relay test connector
Fixed rack mount hardware

## ACCESSORIES AVAILABLE

| | |
|---|---|
| 7078-PEN | Programming Light Pen (includes holder) |
| **CABLES, ADAPTERS** | |
| 7007-1 | Double Shielded Premium GPIB Cable, 1m (3.3 ft) |
| 7007-2 | Double Shielded Premium GPIB Cable, 2m (6.6 ft) |
| 7051-2 | BNC-to-BNC Cable, 0.6m (2 ft) |
| 7051-5 | BNC-to-BNC Cable, 1.5m (5 ft) |
| 8501-1 | 8-Pin DIN Cable (Master/Slave), 1m (3.3 ft) |

## OVERVIEW

**CARD INSTALLATION:** Configurable for front or rear installation.

**CAPACITY:** One plug-in card per mainframe

**EXPANSION CAPACITY:** Daisy-chain expansion of up to four Slave units with one Master unit.

**ANALOG BACKPLANES:** Connections provided for user-supplied cable. Provides automatic row expansions between 7071, 7071-4, 7073, 7074-D, 7075, 7076 and 7077 cards in separate 708A mainframes.

**DISPLAY:** Crosspoint and IEEE-488 bus status.

**MEMORY:** Storage for 100 matrix setups, lithium battery backup.

**PROGRAMMED SETTLING TIME:** 0 to 65 seconds in 1ms increments.

**FRONT PANEL CONTROL:** Crosspoint Control, Factory Default, Open, and Digital I/O.

**TRIGGER SOURCES:** External Trigger (TTL compatible, programmable edge, 600ns minimum pulse width); IEEE-488 bus (TALK, GET, "X"); manual.

**STATUS OUTPUT:** Matrix Ready (TTL compatible programmable high or low true); goes false when relays are switched, true at end of Programmed Settling Time.

**MAKE-BEFORE-BREAK, BREAK-BEFORE-MAKE:** Programmable by row.

**LIGHT PEN OPTION:** Controls crosspoints.

**RELAY DRIVE:** 5A.

## EXECUTION SPEED

**MAXIMUM TRIGGER RATE:** 200 setups per second (stepping through previously stored setups with make-before-break and break-before-make disabled).

**TRIGGER RESPONSE TIME:** External trigger: <1ms.
IEEE-488 GET: <1ms.

**RESPONSE TO IEEE-488 COMMAND (to close a single relay, excluding relay settling time):**
**Standalone:** <15ms.
**Master and Four Slaves:** <55ms.
**Download Time (one setup):** 50ms typical.

## DIGITAL I/O

**OUTPUTS:**

**CONFIGURATION:** 16 open collector drivers with factory-installed 10kΩ pull-up resistors. Each driver has internal flyback diodes.

**PULL-UP VOLTAGE:** 5V @ 65mA internally supplied. External connection provided for user supplied voltage 40V max.

**MAXIMUM SINK CURRENT:** 600mA per channel. 2A max.

**OUTPUT PROTECTION:** Each output protected from short circuits with supply voltages up to 25V DC.

**LOGIC:** Negative true.

**COLLECTOR-EMITTER SATURATION VOLTAGE:** <200mV @ 100mA, <400mV @ 400mA, <600mV @ 600mA.

**INPUTS:**

**CONFIGURATION:** 16 inputs with internal 10kΩ pull-up resistor.

**MAXIMUM VOLTAGE LEVEL:** 42V peak.

**LOGIC:** Positive true logic.