Universal Switching Corporation

CE

General

The SS219A switching systems are specifically designed for high performance switching and of microwave signals in the DC-18GHz band. They are part of our G2 family of products, include many advanced features and they are available only in 50 ohm versions. **This version (-T01) provides an option for self-terminating input and/or outputs.**

The SS219A units are designed to provide excellent signal performance with low crosstalk isolation, good phase matching, high isolation and low signal loss specifications. These field proven rugged units are both compact and cost-effective. They provide the systems engineer with one of the best integrated solutions for reliably routing a wide range of signals for critical applications. Each input can be connected to only one output at a time (no fanout - 1:1 connections).

Built-in features include redundant hot-swap power supplies, integrated rack mounting plus a powerful command and status protocol (488.2 compliant). With a global installation base, they are considered the next generation of switching systems to meet today's and tomorrow's needs for high performance and cost effective switching.

For a version that does not provide self-termination at the input or output ports, see Spec Sheet SS219A-001.

Front view with hinged front panel open exposing redundant plug-in power supplies (included) and plug-in CPU.

Applications

The advanced and sophisticated features of the SS219A systems allows them to be used in numerous applications:

- Ground stations
- Uplink or downlink signal routing
- Base installations
- Communication centers
- Satellite installations

Features

- High reliability relay switching elements
- Input and/or output terminations
- DC to 18GHz bandpass (min)
- SMA signal connectors, or N-Type
- Full access matrix with 1:1 connections
- High crosstalk isolation, bidirectional signal path
- Front panel LED back-lit keypad controls
- High contrast vacuum-fluorescent display
- Various remote interface choices included
- Includes Ethernet with TCP/IP
- Command set is 488.2 compliant
- Rugged 2RU high aluminum chassis (3.50")
- International AC power range
- Self-monitoring hot-swap plug-in power supplies
- Rack mount design (19 inch)
- Built-in chassis slide mounting (slides not included)
- Certified CE EN61010 (LVD)

SS219A-T01

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System Details

The SS219A units are equipped with cool-running switching power supplies and user friendly front panel display and controls. All standard interfaces are included, RS-232C, RS-422A, multi-drop RS-485 and GPIB (IEEE-488), plus Ethernet 10baseT with TCP/IP.

System control options and switching configurations are stored in non-volatile memory (Lithium-backed RAM). Up to 199 different switching configurations may be stored in memory and may be recalled with a single command. This greatly simplifies control of commonly used configurations. For power up conditions, the system can be set to recall the last configuration since power down, or to completely clear all crosspoint connections.

The unit includes hot-swap redundant power supplies. The power supplies are monitored and report problems to the user via the front panel and the remote control ports. The power supplies install through the hinged front panel for quick and easy maintenance. Only one power supply assembly is needed for full operation. If power is lost to the unit, the relays go back to an "open" state. When power returns, the unit can be configured to remain "open" or to recall the last configuration.

LabVIEW VISA drivers can be downloaded from our website. The SS219A is shipped complete with a detailed operations and programming manual. The unit is also compatible with the RouteWarePRO software package.

Configurations

Model	Matrix Size	Impedance	Signal Conn	Input	Output
SS219A-T4O4-50A	4 input x 4 output	50 ohm	SMA	Term	N.O.
SS219A-T4T4-50A	4 input x 4 output	50 ohm	SMA	Term	Term
SS219A-T4O4-50N	4 input x 4 output	50 ohm	N-Type	Term	N.O.
SS219A-T4T4-50N	4 input x 4 output	50 ohm	N-Type	Term	Term
SS219A-T5O5-50A	5 input x 5 output	50 ohm	SMA	Term	N.O.
SS219A-T5T5-50A	5 input x 5 output	50 ohm	SMA	Term	Term
SS219A-T5O5-50N	5 input x 5 output	50 ohm	N-Type	Term	N.O.
SS219A-T5T5-50N	5 input x 5 output	50 ohm	N-Type	Term	Term

NOTE: The unit is bidirectional so "input and ouput" are for reference only.

Performance Specifications

Switching configurations......4x4 or 5x5
Configuration type ....Fixed size
Switching elements...............High reliability relay
Terminations...........................Internal, 2W
Type of array ....MxN blocking (1:1 connections)
Signal type...........................Single-ended analog/digital
Signal connector ....SMA or N-Type female (rear panel)
Frequency range ....DC - 18GHz (min)
Signal coupling ....DC coupled
Impedance ....50 ohm
Transmission loss ....<0.5dB @ 4GHz
                                     <2.0dB @ 12GHz
                                     <3.5dB @ 18GHz
Repeatability ....<0.2dB max
Crosstalk isolation (min) ....>75dB @ 4GHz
                                     >65dB @ 12GHz
                                     >60dB @ 18GHz
Maximum input level............100 watts @ 2.5GHz (term is 2W)
(cold switching)   40 watts @ 18GHz
Power to "ready"..................<5 seconds (no connections)
Command to action............<60mS (with Ethernet)

General Specifications

Remote control ports ....Ethernet (10BaseT) with TCP/IP
                                     GPIB (IEEE-488)
                                     Serial (RS232C/RS422A/RS485)
Serial port................................DE-9S type (mate not included)
Local control ....24 position LED illuminated keypad
Configuration memory.........199 locations
Memory retention ....10 years
Memory battery ....Lithium
Low battery monitoring........Included
Unit firmware ....Field upgradable
Control GUI...........................Optional (RouteWarePRO)
Software drivers.....................LabVIEW VISA (download)
Display...................................4x20 vacuum fluorescent

AC power switch ....Behind hinged front panel (2ea)
AC power ....90-264VAC, 47 to 440Hz, <100W
Power cord............................NEMA 15A (USA) 6 foot (1ea)
Power section........................Hot-swap redundant supplies
Power supply monitoring .....Included
High temperature alarm......Included
Front panel color ....FED-STD-595B #26440 (light gray)
Front panel thickness............1/8"
Mounting................................Chassis-Trak® mounting pattern
Cooling...................................Triple fan assisted (monitored)
Venting...................................Side-To-Side
Weight....................................34lbs
Size...3.50"H x 19.00"W x 21.00"D
Operating temp....................0 to +60C
Non-operating temp ....-20 to +75C
Humidity ....0 to 95% (non-condensing @ +25C)
Altitude...................................<10,000 feet ASL
Mounting................................RETMA slots (EIA), 2RU high
Chassis finish ....Black texture paint & gold iridite
Handles ....Black anodized
Contact life ....>5,000,000 operations (per port)
MTBF..>35,000 hours per MIL-STD-217E, N1
Certifications ....CE EN61010 LVD

Spareable Items (for critical installations)

- ■ XC710-SS219A Plug-in CPU Assembly
- ■ G2PS400CE-D615 Plug-in Power Supply Assembly (70W)
- ■ X10908-012 Keypad Controller CPU
- ■ X600C-001 Keypad Assembly (w/keys)
- ■ XDS4X20 Display Element
- ■ XG2S400-001 Fan Assembly
- ■ XG2S1200-013 Fan DC/DC Assembly
- ■ G2R19A-xxxx-xx Plug-in Switch Module

Universal Switching's policy is one of continuous development, and consequently the company reserves the right to vary from the descriptions and specifications shown in this publication.