Universal Switching Corporation

Specification Sheet SS244-001

High Performance Full Fanout IF Switching

System SS244

Sizes 8x8 to 32x32

February 2009

General

The SS244 switching systems are specifically designed for high performance switching and distributing IF signals in the demanding 20-200MHz band. They are part of our G2 family of products, include many advanced features and they are available in 50 or 75 ohm versions.

The SS244 units are designed to provide excellent IF signal performance with consideration for low crosstalk isolation, low noise figure, low gain flatness and high intercept 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 IF signals for critical applications. A given input can be connected to one, many or up to all outputs at the same time (full fanout).

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 IF switching.

Applications

The advanced and sophisticated features of the SS244 systems allows them to be used in numerous applications:

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

Features

- Designed for low level, low noise IF applications
- Solid-state GaAs switching elements
- Wide 20MHz to 200MHz bandpass (min)
- BNC signal connectors
- Full fanout, non-blocking design
- Unity gain, high isolation 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)

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

SS244-001

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System Details

The SS244 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.

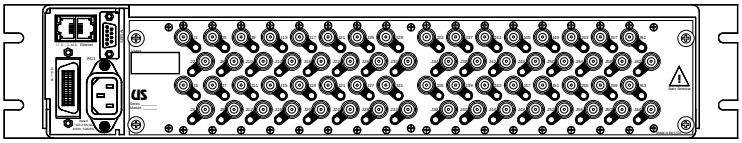
System control options and switching configurations are stored in non-volatile memory (Lithium-backed RAM). Up to 199 different switching configurations may be stored in memory and may be recalled with a single command. This greatly simplifies control of commonly used configurations. For power up conditions, 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.

LabVIEW VISA drivers can be downloaded from our website. The SS244 is shipped complete with a detailed operations and programming manual.

Configurations

Model	Matrix Size	Impedance
SS244-1608-50	8 input x 8 output	50 ohm
SS244-1608-75	8 input x 8 output	75 ohm
SS244-3216-50	16 input x 16 output	50 ohm
SS244-3216-75	16 input x 16 output	75 ohm
SS244-4008-50	32 input x 8 output	50 ohm
SS244-4008-75	32 input x 8 output	75 ohm
SS244-4032-50	8 input x 32 output	50 ohm
SS244-4032-75	8 input x 32 output	75 ohm
SS244-4824-50	24 input x 24 output	50 ohm
SS244-4824-75	24 input x 24 output	75 ohm
SS244-6432-50	32 input x 32 output	50 ohm
SS244-6432-75	32 input x 32 output	75 ohm



Rear view of unit showing remote control ports and the 32 input x 32 output configuration.

NOTE: Consult the factory for special or other configurations.

Performance Specifications

Switching configuration .....8x8 to 32x32
Configuration type .....Fixed size
Switching elements.....Solid-State GaAs
Expander ports.....Not included
Type of array .....MxN Non-blocking with full fanout
Signal type.....Single-ended, AC coupled
Signal connector .....BNC female (rear panel)
Frequency range .....20MHz - 200MHz (min)
Signal coupling .....AC coupled
Impedance .....50 or 75 ohm
Gain.....Unity (nominal)
Flatness.....<1dB across any 40MHz segment
Crosstalk isolation.....>58dB @ 70MHz
Input VSWR .....<1.6 : 1 @ 160MHz
-1dB compression .....>0dBm
Maximum input level.....+13dB (no damage)
Noise figure.....<10dB typical
Third order intercept.....>15dBm typical
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 24lbs
Size .....3.50"H x 19.00"W x 20.50"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
MTBF.....>75,000 hours per MIL-STD-217E, N1
Certifications .....CE EN61010 LVD

Spareable Items (for critical installations)

- XC710-SS244 Plug-in CPU Assembly
- G2PS400CE-D207 Plug-in Power Supply Assembly
- X10908-012 Keypad Controller CPU
- X600C-001 Keypad Assembly (w/keys)
- XDS4X20 Display Element
- XG2S400-001 Fan Assembly
- XG2S1200-013 Fan DC/DC Assembly
- G2S44-xxxx-xx Plug-in Switch Module

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