

Programmable Switching Systems and Modules

Short Form 2011A



Communications - Automated Testing - Broadcast

US **Universal
Switching
Corporation**

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NOTE: For full PDF specification details on all products, see our web-site: www.uswi.com



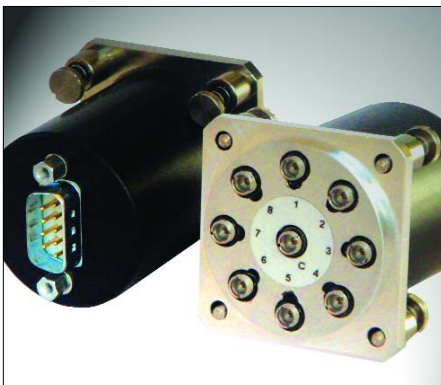
Hot-Swap power supplies
Most products feature hot-swap monitored supplies



Quality nickel plating and silkscreen
Rack mounting is built into most products



Plug-in CPU controllers with LXI support
Latest in hot-swap control interface technology



Innovative Designs
Taking new directions with technology



LED control keys
All units contain LED backlighting, no bulbs



Modular designs
Most products feature some type of modularity

A**about the Company**

Global Leader in Switching Technology

Universal Switching Corporation is an internationally recognized leader in the switching industry that manufactures "state-of-the-art" switching equipment. For nearly 19 years, the USC commitment to Continuous Process Improvement and cutting-edge technology has combined to provide a unique blend of low cost and high quality products.

With a corporate culture that includes a modern facility, talented personnel, a comprehensive Quality Management System and **ISO 9001:2008 certification**, USC provides a standard 2-Year warranty for all equipment, and optional extended 5-Year warranty.

Product Line Offering

A broad product line of switching systems, switching modules (including VXI and VME), and distribution units span a frequency range from DC to 40GHz. Signal types include AC/DC power switching, audio, ATE instrumentation, composite video, SD & HD, HF, RF and IF signals, high resolution RGB+HV video, high speed 422, LVDS, PECL or ECL digital data, cellular telephone, L-Band plus other >3GHz signals to 40GHz.

Embedded intelligent controllers and software are utilized throughout the product line to provide fast, accurate and easy control and monitoring. Adapter panels and remote control panels provide configurability to meet unique interface and control requirements.

Product Line Expansion

With the acquisition of Matrix Systems Corporation's (MSC) switching product line in 2007, the USC product line now includes a number of unique relay modules in support of existing system installations throughout the world. A number of USC product enhancements have further improved this proven product line.

COTS Solutions

Leading the automated switching industry with the largest cross-point capacity, programmable switching systems and modules are available in "off the shelf" configurations to solve time-sensitive switching requirements. Rather than long lead times for special, modified or custom ordered equipment like other manufacturers, USC's "off the shelf" configurations provide turn-key solutions in real time by utilizing the full spectrum of current technology coupled with the latest in design and manufacturing techniques.

In addition to "turn-key" solutions, USC provides custom or OEM systems and modules with minimal lead time and expedited delivery. USC specializes in switching products and equipment which supports or connects to switching equipment, but also has resources and engineering expertise to fulfill any switching related need including requirement evaluation, system design and system integration.

Switching Experience

With a core competency in the switching arena, USC is focused on switching needs within a variety of industries and the direction of future requirements.

A range of USC products are used in the most sensitive of areas requiring high reliability like aerospace and defense, surveillance stations, satellite communications, as well as "everyday" production testing and evaluation applications.

Technological Accomplishments

Globally recognized industry accomplishments include our field proven G2 Series product line introduced in 2001, the revolutionary

System S256xE units, and our new compact high performance digital and analog video product lines. Many of our new or upgraded products are highlighted in this short form.

G2 Series

The G2 Series modular product line offers a host of features and improvements including high performance configurations, fully shielded modules, hot-swap module technology, field-upgradeable firmware, plus optional redundant CPU and power supply configurations. Ethernet (TCP/IP) control has been a USC standard for years while other manufacturers are just now embracing the technology. The new C820 CPU is LXI compliant.



Closeup of front panel controls
Model 10943B L-Band redundancy switcher

Modular products are more cost effective than trying to configure "dedicated purpose" boxes that are the mainstay for many companies. The advantages of a modular system offered by the G2 Series line are as follows:

- Flexible system architecture
- Hot swap power supplies
- Efficient modular design
- Common control and command protocol
- Compact physical format
- Multiple configurations in one box
- Simple logistics for sparing items

Scalable Switching Arrays

The scalable design concept used in the revolutionary System S256xE combines the latest in component technology and advanced control and monitoring features. The scalable design is suitable for production video, audio, telemetry or digital data, and up to 1024x1024 in a compact 5RU rack mounted "building-block" package. The System S256xE features hot-swap modules and hot-swap power supplies as standard features. Optional dual CPUs provide flexibility for meeting unique switching control and system monitoring requirements.

Product Development

Ongoing product development is the driving force behind advanced and innovative designs. USC continues to lead rather than follow the switching industry by investing resources in research and development. Fiber optics, LXI standards, Tri-Stage, and the recently released CAS (Critical Application System) represent the corporate commitment to Continuous Process Improvement and product development.

New product development and designs regularly are introduced on our website, but feel free to contact one of our engineering representatives or the factory directly for consultation. We are confident that a solution to your technical requirement is available.

A

pplications and products

- Uplink / Downlink switching or IRIG timing distribution
- ATE test stations for routing test points to test equipment
- NTSC, CATV and PAL video switching
- Low noise antenna routing to HF receivers
- Airborne surveillance signal switching
- Microwave signal switching (DC to 40GHz)
- High power AC or DC switching (10-90 amps)
- Radar X-Y-Z data, and radar video routing
- Telecommunication routing and broadcasting
- High speed '422, '232, LVDS, PECL and ECL data switching
- Switching inputs from RF analyzers to UUT's
- Security and workstation video systems
- Instrumentation control and monitoring
- RGB+HV video and audio routing and distribution



Model G2S1600CE
Sixteen-slot G2 Mainframe
Rear view with mixed modules installed
(8RU)



Fiber



Series VSU2
Low cost 32x32 video routers
(DC-300MHz)

Model VXI-RMR410
Quad 10x1, DC-18GHz



System S2561E
Scalable from 32x32 to 256x256
(up to 1024x1024 with multiple units)
DC-125MHz
(5RU)



Series VSU1
Low cost video routers
(DC-300MHz)



Series G2 - CAS
Critical Application Systems
for IF, RF, L-Band, microwave
and other types of signals

New!

Model VXI-RR161X2
Sixteen 1x2 module
(DC-3GHz)



Model G2S400CE
Four-slot G2 Mainframe
(2RU)



Model G2R40-71X6-60
Three-slot G2 plug-in with seven 1x6 relays
(DC-40GHz)



Model G2S47-6432-25
Four-slot G2 plug-in 32x32 matrix with expanders
(20-250MHz)





System SF16
Optic Switcher
(1RU)



System LS
Modular "Linker System" for distribution of analog or digital signals with unique open window design



New!



New! **Series G2 - CAS**
Critical Application System
Control and power head unit
(2RU)

Series MR188
Plug-in microwave relays
(DC-18GHz)



New!

Series RS70000
Rugged coaxial relays
DC-800MHz



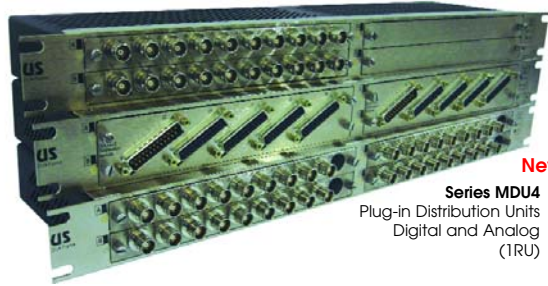
New!



Model G2R12
High power five 6x1 relays
(DC-12GHz)

Model VXI-RGB3216
RGB 16x16 video router
(DC-200MHz)

New!



New! **Series MDU4**
Plug-in Distribution Units
Digital and Analog
(1RU)



Model G2S1600CE
Sixteen-slot G2 Mainframe
Rear view with modules installed
(8RU)



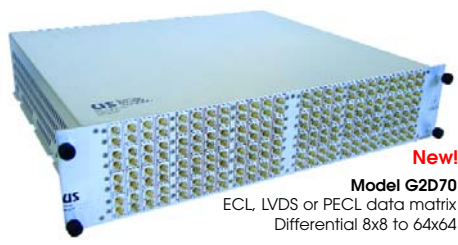
Series VSU1
Low cost video routers
(DC-300MHz)



Model G2S1200CE
Twelve-slot G2 Mainframe
(6RU)



Series RCPA
Rack mount push button controllers
(1RU or 2RU)



New! **Model G2D70**
ECL, LVDS or PECL data matrix
Differential 8x8 to 64x64

Series G2 Rack-Mounted Modular Switching

Modules covering DC to 40GHz
Configurations from 1x2, up to 64x64

Series G2 products is a second generation line of modular products introduced during 2001. They provide the system engineer with cost effective configuration and performance options not previously available. Any Series G2 module can be installed by simply sliding the module into the rear module bay of a Series G2 Mainframe.

Solid-state, relay-based, digital and fiber-optic products are offered to meet most any requirement. The list of module types keeps growing with new products including both MxN switching arrays and 1xN types. Also, non-blocking (full fan-out), combining (full fan-in) and blocking arrays are available, plus fully digital types as well including TTL, E1/T1, 422, ECL, PECL and LVDS.

What is the Series G2, and how does it work?

The Series G2 is a very comprehensive modular switching product design comprised of three basic system components. The following outlines these three major system components and what's required to build a high-performance modular switching system.

- Rack mountable mainframe unit with plug-in power supplies.
- Plug-in switching module(s)
- Plug-in CPU with remote control interface ports(s)

G2 Mainframes

The rack mountable mainframe units are available in four basic rack mount sizes (2RU, 3RU, 6RU and 8RU). The different sizes are offered to meet various sized switching demands from small to large. They are designed to provide control and power to any of the Series G2 plug-in modules. The modules install into the rear-facing module bay providing connection access for cable management as can be seen in the example at the top of this page.

Plug-in power sections with different voltage combinations are available to meet the requirements of the different Series G2 modules available. The supplies are self-monitoring with operational status reported to the main CPU. Single or redundant supplies install through hinged front panels for hot-swap replacement in critical requirements. Two supplies can be installed for redundancy with independent AC power inputs provided.

G2 Plug-in Modules

The modules that plug-in to the Series G2 mainframes are designed to install into the rear of the units. This makes the signal I/O connectors face the rear (inside of the rack) of the mainframe. This is best suited for most installations to simplify cable routing to and from the switching system. The Series G2 module series spans DC-40GHz to address many different applications including audio or video, high speed digital data, telemetry, IF or RF, microwave and other types of installations. Each module occupies a certain number of module "slots" within a mainframe. Some modules occupy only one slot while others occupy up to 16 slots. Power and control for the module is supplied by the mainframe in which it's installed.

Plug-in Series C820 CPU(s)

Our two larger mainframes (6RU and 8RU) accept up to two individual plug-in CPU interface modules, the smaller 3RU high G2S600CE accepts only one, while the G2S482CE include a CPU/interface. These new LXI compliant CPU's provide control for the modules, and also provide remote control interfacing to the user. Firmware is field upgradeable via the integrated USB port.

The CPU's are available in two versions, Ethernet (10/100) only and Ethernet with Serial type (RS-232C/422A/485) and GPIB (IEEE-488) for legacy applications. Even though the Series G2 utilizes the C820 CPU, this same CPU is utilized in other products as well (S256xE).

NOTE: The new C820 CPU includes increased memory capacity, FLASH memory, realtime clock, built-in web browser configuration interface, LXI support and 10/100BaseT Ethernet.



Series G2
Example mixed system, 8RU

Custom systems or modules as requested!



G2S482CE Mainframe
Four module slots, 2RU



Model G2S600CE
Six module slots, 3RU



G2S1200CE Mainframe
Twelve module slots, 6RU



G2S1600CE Mainframe
Sixteen module slots, 8RU



C820-GS
Plug-in CPU and controller
Ethernet, GPIB & Serial



Series C710
Ethernet and Serial
(C710 Series is being phased out)

Series G2: Switching Matrix Arrays - MxN (sorted by frequency range)

	Series	Elements	Frequency Range	Isolation (dB) Typical	Impedance	Minimum Size	Maximum Size	Slots	Conn Type
	G2S02	Solid-state	DC-500kHz	>70dB @ 100kHz	100, 300, 600 or 50K	16in, 16out	64in, 64out	1-2	D-Sub
	G2R10	Relay	DC-10MHz (typ)	>45dB @ 10MHz	100 ohm balanced	4in, 4out, 2-wire	16in, 16 out, 2wire	1	D-Sub
	G2S11	Solid-state	T1 & E1 rates	n/a	100 ohm balanced	8in, 8out	16in, 16out	3	RJ45
New!	G2D62B	Digital	DC-50Mbps	n/a	100 ohm (422)	8in, 8out	64in, 64out	1-8	Triax (BJ77)
New!	G2D64B	Digital	DC-50Mbps	n/a	100 ohm (422)	32in, 32 out	64in, 64out	1 or 2	D-Sub
	G2D71	Digital	>100Mbps	LVDS in, ECL out	50 ohm (differential)	8in, 8out	64in, 64out	2-8	SMB
	G2D72	Digital	>100Mbps	LVDS in, LVDS out	50 ohm (differential)	8in, 8out	64in, 64out	2-8	SMB
	G2S32H	Solid-state	DC-75MHz	>60dB @ 10MHz	50 or 75 ohm	8in, 8out	64in, 64out	1-8	BNC
	G2S32	Solid-state	DC-125MHz	>40dB @ 125MHz	50 or 75 ohm	8in, 8out	64in, 64out	1-8	BNC
	G2S33	Solid-state	DC-160MHz	>40dB @ 125MHz	50 or 75 ohm	8in, 8out	64in, 64out	1-8	BNC
	G2S44	Solid-state	20-250MHz	>60dB @ 70MHz	50 or 75 ohm	8in, 8out	48in, 48out	4-6	BNC
	G2S47	Solid-state	20-250MHz	>60dB @ 70MHz	50 or 75 ohm	8in+EX, 8out+EX	48in+EX, 48out+EX	4-6	BNC
	G2S48	Solid-state	20-250MHz	>60dB @ 70MHz	50 or 75 ohm	8in, 8out+EX	48in, 48out+EX	4-6	BNC
New!	G2S54	Solid-state	20-250MHz	>60dB @ 70MHz	50 or 75 ohm (combine)	8in, 8out	48in, 48out	4-6	BNC
New!	G2S57	Solid-state	20-250MHz	>60dB @ 70MHz	50 or 75 ohm (combine)	8in+EX, 8out+EX	48in+EX, 48out+EX	4-6	BNC
New!	G2S58	Solid-state	20-250MHz	>60dB @ 70MHz	50 or 75 ohm (combine)	8in, 8out+EX	48in, 48out+EX	4-6	BNC
	G2D70	Digital ECL	>360Mbps	n/a	50 ohm (differential)	8in, 8out	64in, 64out	2-16	SMA or SMB
New!	G2S42	Solid-state	20-1000MHz	>50dB @ 1000MHz	50 ohm	8in, 8out	12in, 16out	4	BNC or SMA
New!	G2S75A	Solid-state	800-2400MHz	>50dB @ 2400MHz	50 ohm	8in, 8out	32in, 32out	4-12	SMA or N-Type
New!	G2S75X	Solid-state	150-3000MHz	>50dB @ 2400MHz	50 ohm	8in, 8out	32in, 32out	4-12	SMA or N-Type
	G2S78	Solid-state	20-3000MHz	>50dB @ 2400MHz	50 ohm	8in, 4out	16in, 16out	3-6	SMA or N-Type
New!	G2R19A	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm	4in, 2out	10in, 10out	4	SMA or N-Type

Series G2: 1xN Type Arrays (sorted by frequency range)

	Series	Elements	Frequency Range	Isolation (dB) Typical	Impedance	Minimum Size	Maximum Size	Slots	Conn Type
	G2S08	Solid-state	DC-400Hz	Power Relay	AC or DC switch	1ea 1x1	1ea 1x8	3	Terminal Screw
	G2R04	Relay	DC-10MHz (typ)	>50dB @ 10MHz	100 ohm balanced	1ea 1x4, 2-wire	1ea 1x4, 8 wire	1	D-Sub
New!	G2R06	Relay	DC-10MHz	>60dB @ 10MHz	General purpose	8ea 1x1 (DPDT)	4ea 1x16 (DP16T)	1	D-Sub
	G2R16	Relay	DC-1.3GHz	>55dB @ 1GHz	50 or 75 ohm	6ea 1x2	1ea 1x16 w/exp	1	BNC or SMA
	G2R16T	Relay	DC-1.3GHz	>55dB @ 1GHz	50 or 75 ohm (self term)	6ea 1x2	1ea 1x16 w/exp	1	BNC or SMA
	G2R15	Relay	DC-3GHz	>60dB @ 1GHz	50 or 75 ohm	6ea 1x2	1ea 1x16 w/exp	1	SMA
	G2R15T	Relay	DC-3GHz	>60dB @ 1GHz	50 or 75 ohm (self term)	6ea 1x2	1ea 1x16 w/exp	1	SMA
	G2R13	Relay	DC-6GHz	>55dB @ 3GHz	50 ohm	6ea 1x2	2ea 1x8	1	SMA
	G2R20	Relay	DC-12GHz	>80dB @ 4GHz	50 ohm	1ea 1x2	6ea 1x2, 2ea 1x6	4	N-Type
	G2R12	Relay	DC-12GHz	>80dB @ 4 GHz	50 ohm	1 ea 1x3	5ea 1x6	4	N-Type
	G2R14	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm (self terminating)	1ea 1x3	6ea 1x6	3	SMA
	G2R17	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm	1ea transfer	8ea transfer	2	SMA
	G2R18	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm	1ea 1x6	7ea 1x6	3	SMA
	G2R21	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm	1ea 1x2	8ea, 1x2 & transfer	2	SMA
	G2R22	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm	1ea 1x6	10ea 1x6	2	SMA
	G2R27	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm (self terminating)	1ea 1x8	4ea 1x10	5	SMA
	G2R28	Relay	DC-18GHz	>60dB @ 18GHz	50 ohm	1ea 1x8	7ea 1x10	3	SMA
	G2R25	Relay	DC-26.5GHz	>55dB @ 26GHz	50 ohm	4ea 1x2	16ea 1x2	2	SMA
	G2R40	Relay	DC-40GHz	>50dB @ 40GHz	50 ohm	1ea 1x3	7ea 1x6	3	K-Type
	G2F90	Mems	1300-1610nm	>50dB	n/a	1ea 1x2	8ea 1x2	2	SC or FC

Series G2 - CAS (Critical Application System)

Modules covering DC to 30GHz
Rack Mounted Modular Switching Configurations

The newly introduced CAS version of our field proven Series G2 products brings switching system technology to a new level. Derived from the Series G2, our new CAS version is specifically designed for ease of maintenance and high reliability coupled with a streamlined rugged design.

The typical CAS configuration consists of a 2RU power and control head, plus one or more switch frames depending upon the overall system configuration. The 2RU head unit can be configured with front loading dual hot-swap power supplies and dual hot-swap control CPU's. Standard features include manual controls and display. The switch frames are available in standard sizes to meet common system needs. The frames are easily configured to user needs providing all interconnect cabling required between the front loading CAS modules and the rear connector panels. Rear panel signal connectors can be specified to meet any user requirement.

All modules, CPU's and power supplies can be hot-swapped via the hinged front panels without disturbing any cabling whatsoever. Simply open the front panel, slide the item out and replace with a spare one.



Applications:

- Ground stations
- Communication centers
- Defense or FAA needs
- Critical missions

Video Routers and Distribution Amplifiers

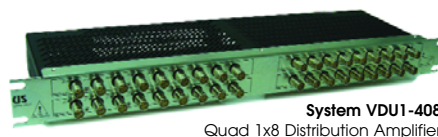
Low-cost Analog and Digital Video Routers & Distribution Units

Specifically designed for either analog or digital video switching, these units provide an effective solution for smaller video installations. Compact and feature loaded, they are only 1RU or 2RU high and turn-key out of the box. These "fixed" configurations systems are not modular further reducing their cost. Suffix dash numbers can define other options. Adding a -E10 provides an Ethernet port.

Model	Frequency Range	Features	
VSU1-3208 (H)	DC-300MHz	24in, 8out analog, 75 ohm	
VSU1-3216 (H)	DC-300MHz	16in, 16out analog, 75 ohm	
VSU1-3224 (H)	DC-300MHz	8in, 24out analog, 75 ohm	
DVSU1-3208	143/177/270/360Mbps	24in, 8out digital (SMPTE 259M)	New!
DVSU1-3216	143/177/270/360Mbps	16in, 16out digital (SMPTE 259M)	New!
DVSU1-3224	143/177/270/360Mbps	8in, 24out digital (SMPTE 259M)	New!
HDVSU1-3208	270M/1.485G/2.97G	24in, 8out digital (SMPTE 292M, 424M)	New!
HDVSU1-3216	270M/1.485G/2.97G	16in, 16out digital (SMPTE 292M, 424M)	New!
HDVSU1-3224	1.485/2.97Gbps	8in, 24out digital (SMPTE 292M, 424M)	New!
VSU1-4P6T	DC-135MHz	Quad 6x1 analog, high level	
VSU1-4P6T-AB	DC-135MHz	Quad 6x1 analog, high level with A/B	
DVSU2-6432	143/177/270/360Mbps	32in, 32out digital (SMPTE 259M)	New!
HDVSU2-6432	270M/1.485G/2.97G	32in, 32out digital (SMPTE 292M, 424M)	New!
VSU2-6432	DC-500MHz	32in, 32out analog, 75 ohm	New!
VDU1-108-R	DC-125MHz	Single 1x8 distribution amplifier, 75 ohm	
VDU1-208-R	DC-125MHz	Dual 1x8 distribution amplifier, 75 ohm	
VDU1-208-R	DC-125MHz	Triple 1x8 distribution amplifier, 75 ohm	
VDU1-408-R	DC-125MHz	Quad 1x8 distribution amplifier, 75 ohm	

Applications:

- Serial Digital Video
- NTSC and RGB Video
- DVI-D and HDMI
- TTL or IRIG Timecode



NOTES:

1. Other versions available as well.
2. The "H" option on the VSU1 allows +/-5V signals and up to 75MHz bandpass (35MHz @ +/-5V)

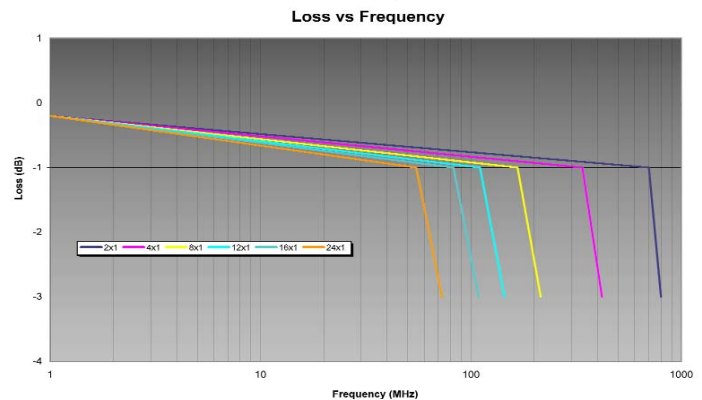
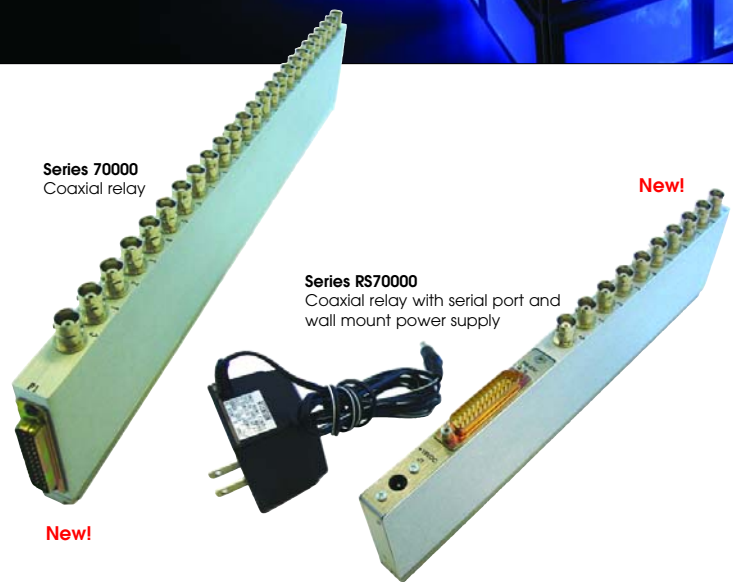
Series 70000 and RS70000 Coaxial Relays

Rugged Coaxial Relays: DC-800MHz (frequency is size dependent)
Sizes from 2x1 to 24x1

USC acquired the product line of Matrix Systems Corporation in April of 2007. One of the product lines that USC continues to build is the coaxial relay line. The 70000 and RS70000 relays are unique in the relay industry due to the rugged design and excellent shielding characteristics.

The Series 70000 is an Nx1 relay with various coaxial contact types that are controlled by DC voltage. The Series RS70000 is also an Nx1 relay (like the Series 70000) but has a built-in serial control port as well. The RS70000 can be used in a standalone installation since the control port and wall mount style power supply is included. The Series 70000 relay is used by simply applying the appropriate DC voltages, or install it into a Model U11600 rack mount chassis complete with relay drivers, remote control ports and power supplies.

USC has changed the model numbering of the original series for compatibility with our inventory system. If you are unsure what your new model number might be, feel free to contact our application staff for assistance. Note that not all combinations or sizes are being built. For exact reorder of an old MSC unit, there will be a minimum order quantity. Contact your salesman or the factory for details.



70000 Model Number Definition

U7(CC)(NT)-(V)(D)(X)

Example: U72512-1PA (contact 25, 12x1, 24vdc, diodes with common positive and SMA's)

(CC) - Contact Configuration Type

- 10 - Standard (normally open) 100vdc, 250ma, 10W
- 25 - Standard (self-terminating type, 50 ohm) 4vdc, 250ma, 1/3W
- 27 - Standard (self-terminating type, 75 ohm) 4vdc, 250ma, 1/3W
- 30 - Medium isolation (normally open) 100vdc, 250ma, 10W
- 40 - High isolation (normally open) 28vdc, 250ma, 3W
- 65 - High isolation (self-terminating, 50 ohm) 4vdc, 250ma, 1/3W
- 67 - High isolation (self-terminating, 75 ohm) 4vdc, 250ma, 1/3W
- 70 - Mercury wetted (normally open) 500vdc, 1A, 35W (Note 5)
- 90 - Standard with Triaxial connector (BJ77) 100vdc, 250ma, 10W

(NT) - Number of throws

- 02 - 2x1
- 04 - 4x1
- 08 - 8x1
- 12 - 12x1
- 16 - 16x1
- 24 - 24x1

(V) - Coil voltage (nominal)

- 1 - 24vdc to 28vdc (1000 ohm coils)
- 2 - 15vdc (500 ohm coils)
- 5 - 5vdc (135 ohm coils with NO series polarity diode included: P or N option)

(D) - Coil suppression diodes

- 0 - Not included
- P - Suppression diodes included with coil common positive
- N - Suppression diodes included with coil common negative

(X) - Extra options

- A - SMA signal connectors (only on contact types 10, 25, 27 & 65)
- F - F-Type signal connectors (only on contact types 10, 27)
- T - TNC signal connectors (only on contact types 10, 25, & 65)
- I - Insulated coaxial shield (only on contact types 10, 25, 27 & 70)
- S - Insulated & switched coaxial shield (only on contact types 10, 25, 27, 70)
- L - Lockscrews on control connector so mate can be secured

NOTES:

1. The I or S options are not available on the optional signal connectors or the contact type 90 (triaxial).
2. The "expander" port is not available any longer.
3. No mating connectors or hardware are included.
4. Contact type 70 must be mounted with signal connectors facing up.
5. Due to new environmental laws, USC may or may not be able to sell relays with mercury wetted contacts. Spec was 2A, 50W.
6. For installing into the U11600 chassis, the "-1" coil voltage is needed.
7. Type 27 and 67 use the standard 50 ohm MSC connector.

RS70000 Model Number Definition

URS7(CC)(NT)-(X)

Example: URS71008-A (contact 10, 8x1, and SMA connectors)

(CC) - Contact Configuration

- 10 - Standard (normally open) 100vdc, 250ma, 10W
- 25 - Standard (self-terminating type, 50 ohm) 4vdc, 250ma, 1/3W
- 27 - Standard (self-terminating type, 75 ohm) 4vdc, 250ma, 1/3W
- 30 - Medium isolation (normally open) 100vdc, 250ma, 10W
- 40 - High isolation (normally open) 28vdc, 250ma, 3W
- 65 - High isolation (self-terminating, 50 ohm) 4vdc, 250ma, 1/3W
- 67 - High isolation (self-terminating, 75 ohm) 4vdc, 250ma, 1/3W
- 70 - Mercury wetted (normally open) 500vdc, 1A, 35W (Note 5)
- 90 - Standard with Triaxial connector (BJ77) 100vdc, 250ma, 10W

(NT) - Number of throws

- 02 - 2x1
- 04 - 4x1
- 08 - 8x1
- 12 - 12x1
- 16 - 16x1
- 24 - 24x1

(X) - Extra options

- A - SMA signal connectors (only on contact types 10, 25, 27 & 65)
- F - F-Type signal connectors (only on contact types 10, 27)
- T - TNC signal connectors (only on contact types 10, 25, & 65)
- I - Insulated coaxial shield (only on contact types 10, 25, 27 & 70)
- S - Insulated & switched coaxial shield (only on contact types 10, 25, 27, 70)

NOTES:

1. The I or S options are not available on the optional signal connectors or the contact type 90 (triaxial).
2. The "expander" port is not available any longer.
3. No mating connectors or hardware are included.
4. Contact type 70 must be mounted with signal connectors facing up.
5. Due to new environmental laws, USC may or may not be able to sell relays with mercury wetted contacts. Spec used to be 2A, 50W.
7. Type 27 and 67 use the standard 50 ohm MSC connector.

Flexible Rack Mounted Systems

System S256xE

Flexible configurations from 32x32 to 1024x1024: DC-125MHz

High performance and low cost switching arrays are available in a COTS solution with the S256xE switching systems. These units may be configured up to a 256 input x 256 output system in a single chassis. With four units, a 512x512 can easily be configured, or sixteen units for a huge 1024x1024. They offer the highest crosspoint density in the switching industry with over 65,500 crosspoints in a single 5RU (8.75" high) rack mount package.

As many as eight input modules (left side) and eight output modules (right side) may be installed. Each module adds 32 channels to the system capacity. The system is sized by installing the desired number of plug-in modules to size the configuration.

Embedded controllers provide fast routing of signals through the system. Built-in redundant signal paths allow each I/O connection up to 30 different signal paths for ultimate reliability. The solid-state analog switching core offers high bandwidth and performance. The input and output modules are available with a number of different input and output specifications. Modules are available for direct audio or digital '422, plus high bandwidth modules are compatible with our Series AP adapter panels to allow the system to route single-ended 125MHz video or telemetry signals.

The example shown to the right shows the S2561E used as a building block to configure a full 512 input, 512 output configuration with over 125MHz bandpass capability using the external 1RU adapter panel assemblies (Series AP32x).

Systems include front panel control and display, plus they are available with single or dual CPUs. The CPU's are available in Ethernet, Ethernet with Serial, or Ethernet with GPIB.

Applications:

- PCM Telemetry
- TTL Clock and Data
- Mixed analog signals
- 422 Clock and Data
- IRIG time code
- Audio or Video routing



System S2561E (5RU)
Configurable from 32x32 to 256x256,
(or 512x512 with four units)

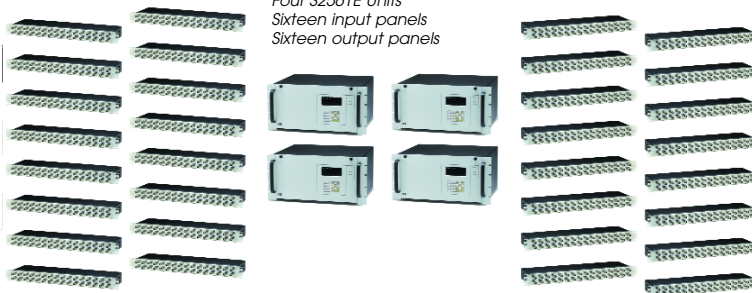


Series "AP" Adapter Panels
Units available for various configurations with
interconnect cables included

System Type	Frequency Range	Features
S2560E	DC-125MHz	Differential analog I/O, SCSI-II
S2560E (D)	>30Mbps	Differential digital (422) I/O, SCSI-II
S2561E	DC-125MHz	Single-ended analog, D-Sub
S2562E New!	DC-200kHz	Single-ended instrumentation analog

System S2561E Example

Configured as a 512x512:
Four S2561E Units
Sixteen input panels
Sixteen output panels



Redundancy Switching (backup)

Four versions spanning DC-18GHz

High value satellite communication installations require high reliability equipment. These 1094xB units provide the systems professional with an uncompromising combination of high performance and high reliability switching elements coupled together in a dual mode backup system design. Standard front installation redundant power supplies available in AC or DC versions plus redundant system control interfaces deliver the ultimate in system reliability for critical SatCom applications.

Compact and high performance, the 10943B provides cost effective, flexible switching capacity for critical installations, providing 4 channels of A/B (primary or backup) switching.

Applications:

- Communication centers
- Signal redundancy
- L-Band, IF, RF signals
- Satellite systems



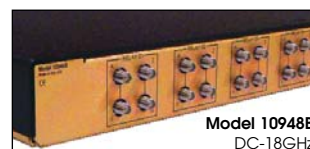
Model 10942B
DC-800MHz



System Type	Frequency Range	Features
10942B	DC-800MHz	BNC connectors, 75 or 50 ohm
10943B	DC-2.4GHz	SMA connectors, 50 ohm
10946B	DC-6GHz	SMA connectors, 50 ohm
10948B	DC-18GHz	SMA connectors, 50 ohm
10944B	1300-1610nm	Quad fiber 2x1, SC or FC connectors



Model 10943B
DC-2.4GHz



Model 10948B
DC-18GHz

VXIbus Switching Modules

Register-based VXIbus modules for ATE and Avionics

Our version 1.4 VXIbus modules are designed for a number of switching applications including ATE, video, digital signals and microwave. Sizes are C1 to C5.

Model	Size	Configuration Description
VXI-AS4816	C1	32x16 two wire analog switching array (DC-150kHz)
VXI-D4816	C1	32x16 digital data switching array ('422 type)
VXI-RR161X2	C1	Sixteen 2x1 relay sections with SMB connectors (DC-1.3GHz)
VXI-RRQ8	C1	Four 8x1 relay sections with SMB connectors (DC-1.3GHz)
VXI-RMR46	C2	Quad 1x6 relay sections (DC-18GHz, 26GHz, or 40GHz)
VXI-RMR410	C2	Quad 1x10 relay sections (DC-18GHz)
VXI-RMR107	C5	Mixed relay sections (DC-18GHz and 40GHz)
VXI-RMR76	C1	Seven 1x6 relay sections, DC-18GHz
VXI-RMR242B	C2	Twenty-four 1x2 relay sections (DC-26GHz)
VXI-E3216	C2	16x16 differential ECL array (PECL or LVDS available too)
VXI-RGB3216	C1	RGB non-blocking full fanout video matrix (DC-200MHz)



VXI-RR161X2

VXI-DS4816

VXI-RMR107



New!

VXI-RM1
Ruggedized Mainframe

Pre-Configured SS2 Systems

This convenient system package called "SS2" which takes common configurations from the Series G2 switching line and makes it simple to order a completely "turn-key" unit. Below are some examples but check our website for additional details. All units are based on the 2RU rack mounted G2S400CE unit, include redundant power supplies and contain all three remote interface types (Ethernet, Serial and GPIB). See our website for additional details.



SS2 Pre-Configured Systems

Model	Frequency Range	Switching Array Description
SS202	DC-150kHz	Differential analog matrix for audio or telemetry, 16x16 to 64x64
SS214	DC-18GHz	Up to six 6x1 self-terminating microwave relays
SS215	DC-3GHz	Coaxial Nx1 switching, 2x1, 4x1, 8x1, 16x1 sizes, SMA connectors
SS216	DC-1.3GHz	Coaxial Nx1 switching, 2x1, 4x1, 8x1, 16x1 sizes, BNC or SMA
SS216T	DC-1.3GHz	Coaxial Nx1 switching with self-termination, 2x1, 4x1, 8x1, 16x1 sizes, BNC or SMA
SS218	DC-18GHz	Up to seven 6x1 normally open microwave relays, SMA connectors
SS232	DC-125MHz	DC coupled system for high frequency video signals (+/- 1.5V)
SS232H	DC-75MHz	DC coupled system for high-level PCM, video, TTL or similar signals (+/-5V)
SS240	DC-40GHz	Up to seven 6x1 normally open microwave relays, SMA connectors
SS244	20-250MHz	High performance non-blocking "fan out" IF matrix, 8x8 to 32x32, 50 or 75 ohm
SS254	20-250MHz	High performance combining "fan in" IF matrix, 8x8 to 32x32, 50 or 75 ohm
SS264B	DC-50Mbps	Differential 422 digital matrix for clock/data, 16x16 to 64x64, single or dual

Total Switching System Solutions

Controllers, Software, Quality

Universal Switching Corporation can provide the complete solution to your switching needs including remote control and status panels, rack-mounted control PC units, plus monitor and control software. All units are designed to be remotely controlled. We offer a host of choices comprised of Ethernet, Serial (RS-232C, RS-422A and RS-485), GPIB and manual.

Product quality is maintained throughout all factory processes with our ISO 9001:2008 certified facilities. Contact the factory or our local representative and let us provide your solutions!



Series RCMPA
Remote Control Panel
Assemblies



Download our Monitor and Control GUI software **RouteWarePRO** for a FREE 30-day trial today!



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November 2010

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