

## General

The relay-based VXI-RMR72 coaxial microwave switching module provides a flexible configuration for many applications. It contains multiple 18GHz relay sections for use in ATE stations, communication sites or other demanding applications requiring compact high performance microwave switching.

It provides up to ten 1x6 and six 1x2 individual relay sections within a single C4 sized VXI module. Each relay element is individually shielded from each other and the internal control/status circuitry. A unique control driver method reduces the amount of power the module requires from the host VXI mainframe, reducing cooling requirements and increasing reliability.

Ultra-high reliability relay elements (>1,000,000 operations) are coupled with control and status circuitry. Sections can be field replaced without special tools since each section is connectorized.

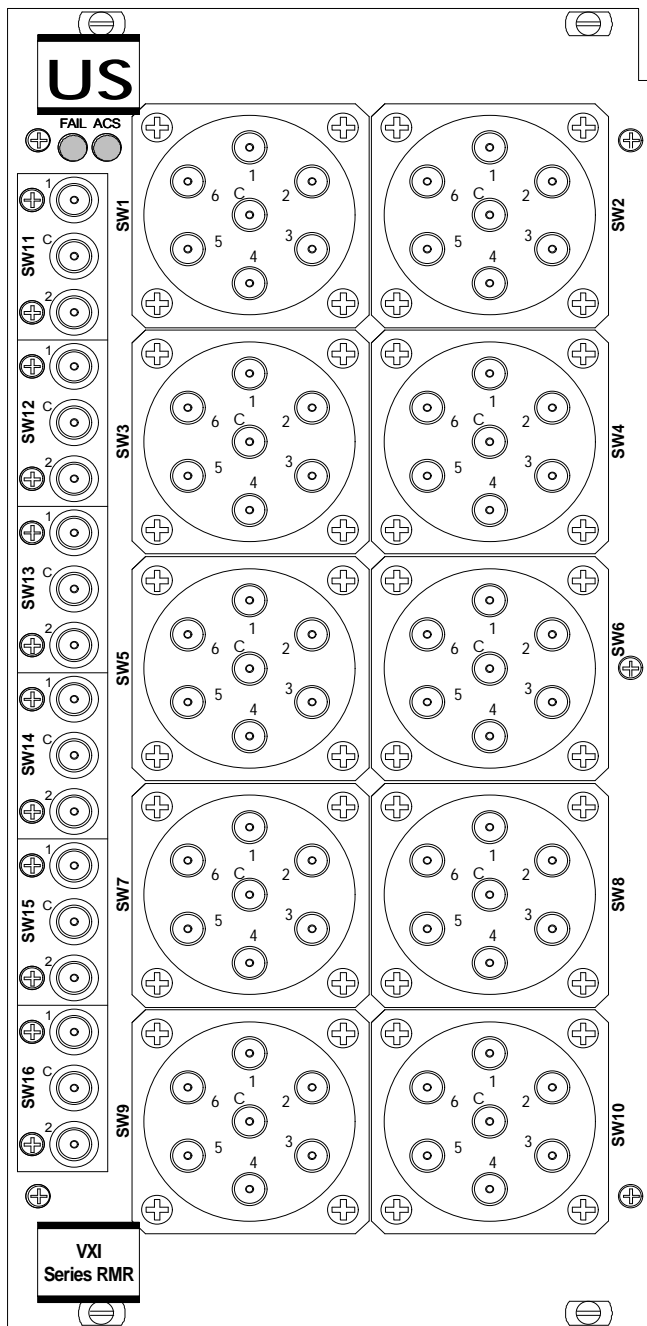
The number of sections included is determined by the model number. A reduced configuration can be further populated while in the field. Additional configurations are available on special order.

### Applications

- ATE systems
- Communication installations
- Antenna routing
- Switching high speed ECL/PECL data
- Satellite control centers
- Ground station IF signal routing

### Features

- Fast register-based control
- High reliability relay elements
- DC to 18GHz bandpass (min)
- High performance stainless steel SMA signal connectors
- Field replaceable plug-in relay elements
- Rugged aluminum shielded C4 sized enclosure
- Built-in control and status circuitry
- Individually shielded sections
- LabVIEW drivers included



## Configurations

- VXI-RMR72 . . . . .Ten 1x6 & six 1x2 relays (standard)
- VXI-RMR72-xxx . . . . .Special configurations (consult factory)

## Example Module Usage

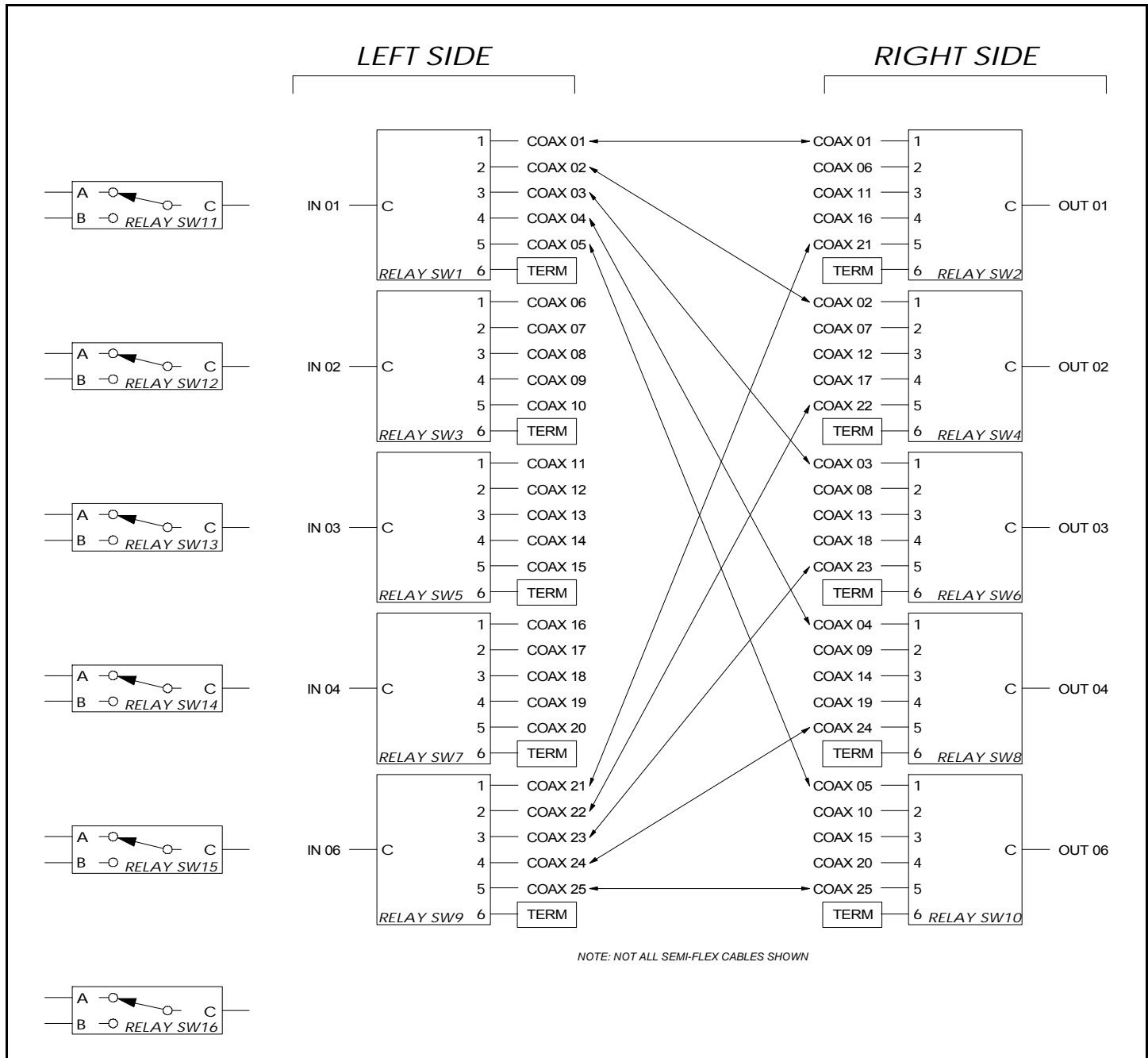
Many different applications can be served by the VXI-RMR72 VXI module. The module provides a versatile building block for both 1xN type switching and XY matrix switching, or both.

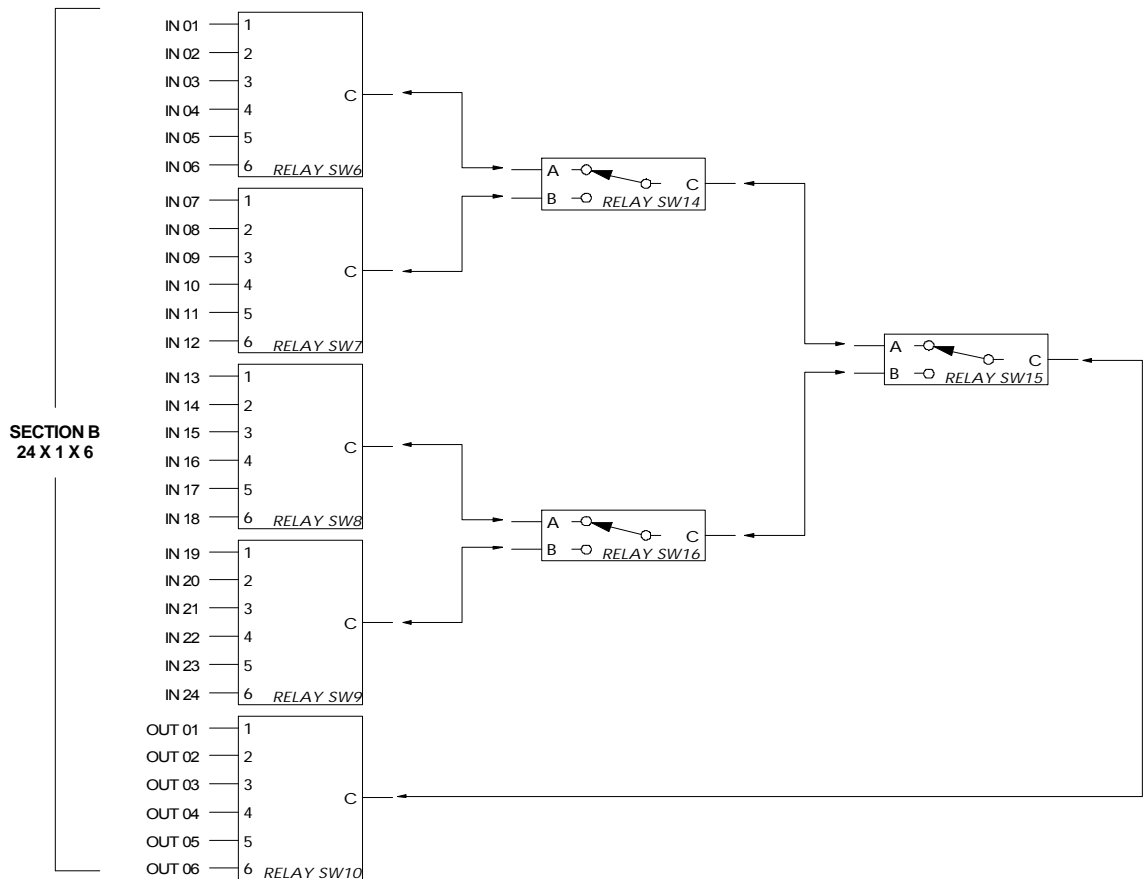
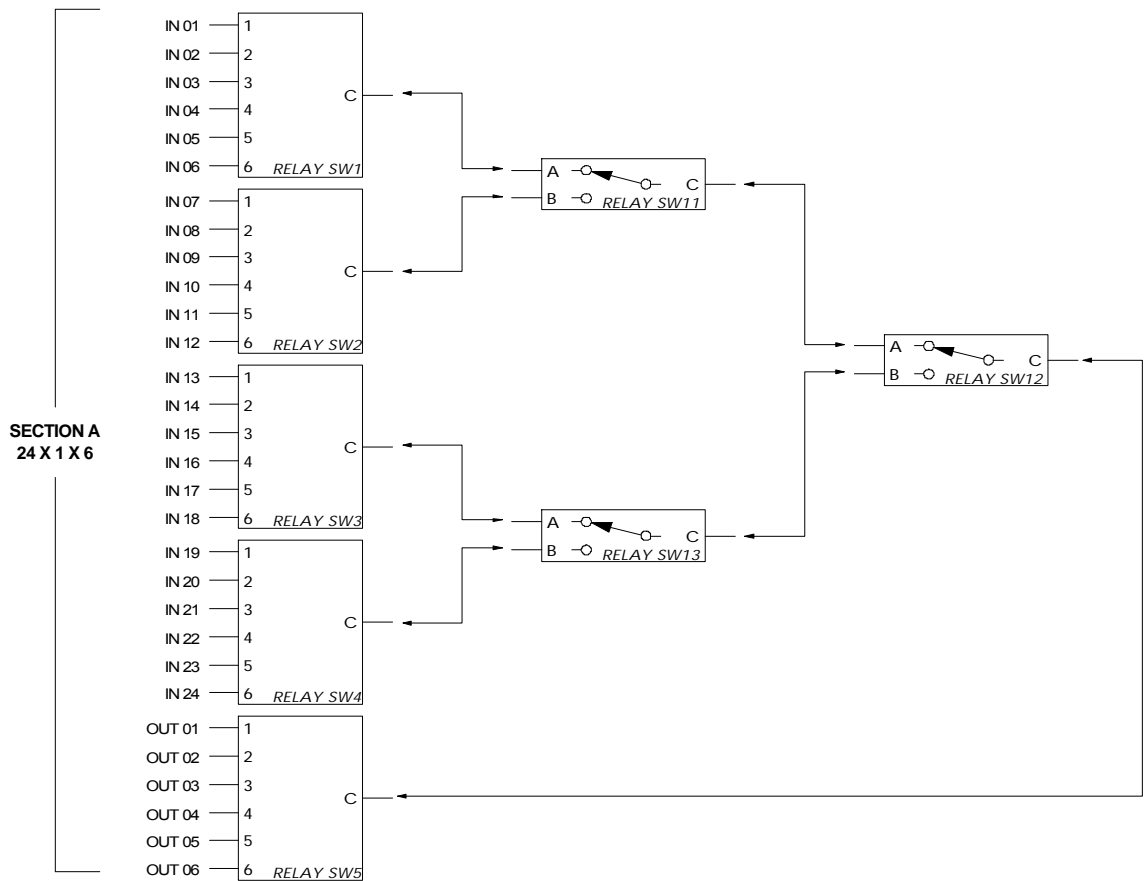
Universal Switching Corporation builds systems utilizing this and other modules to meet customer applications. The diagram below illustrates a five input, five output blocking switching array with terminated I/O ports. This allows the user to route 18GHz signals from any of the five inputs to any of the five outputs with 1 to 1 connections. The 1x2 sections could be added to further enhance the connectivity possi-

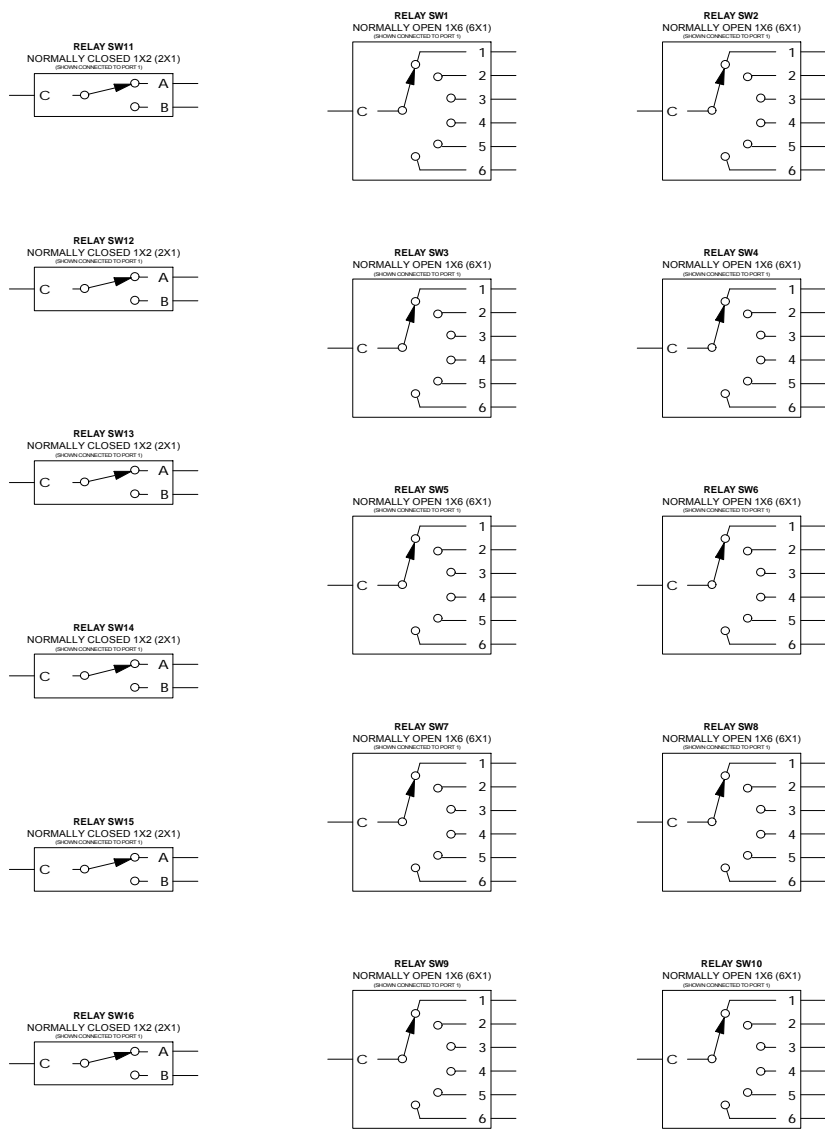
ble. Interconnection cabling can be provided by the factory using high performance 30GHz semi-flex cabling insuring the best possible performance.

Another example configuration (page 3) shows how the module relay sections can be cascaded in a "tree" configuration to achieve larger switching configurations. This example shows a dual 24x1x6 switching array. Semi-flex 30GHz cabling is utilized to connect the individual sections. LabVIEW drivers can be provided to simplify the control of the module.

## Blocking 5x5 Switching Array & A/B Switching







**Signal Specifications**

Switching elements . . . . .Relay-based  
 Operating mode . . . . .NO (1x6) & NC (1x2)  
 Configuration . . . . .Ten (1x6) & six (1x2)  
 Signal type . . . . .Analog, bi-directional  
 Signal connector . . . . .Stainless steel female SMA  
 Frequency range . . . . .DC - 18GHz (min)  
 Impedance . . . . .50 ohm  
 Insertion loss . . . . .<0.30dB @ 4GHz  
 <0.35dB @ 8GHz  
 <0.40dB @ 12GHz  
 <0.50dB @ 18GHz  
 Repeatability . . . . .<0.10dB max  
 Crosstalk isolation (min) . . .>75dB @ 4GHz  
 >70dB @ 8GHz  
 >65dB @ 12GHz  
 >60dB @ 18GHz  
 VSWR . . . . .<1.2 : 1 @ 4GHz  
 <1.3 : 1 @ 8GHz  
 <1.4 : 1 @ 12GHz  
 <1.5 : 1 @ 18GHz  
 Maximum power . . . . .100 watts @ 2.5GHz  
 40 watts @ 18GHz  
 Switching speed . . . . .<50mS (plus control time)

**General Specifications**

Module size . . . . .Quad (C4)  
 Control type . . . . .Register based (V1.4)  
 Sparing . . . . .Field replaceable elements  
 Construction . . . . .Shielded aluminum case  
 Mating SMA torque . . . . .8 inch pounds MAX  
 DC power . . . . .+5V @ 1A plus 125mA/closure  
 +12V @ 310mA (50mS duration)  
 Weight . . . . .<5lbs  
 Operating temp . . . . .0 to +70C  
 Non-operating temp . . . .-20 to +85C  
 Humidity . . . . .0 to 95% (NC @ +25C)  
 Contact life . . . . .>1,000,000 operations (per port)  
 MTBF . . . . .>75,000 hours  
 (per MIL-HDBK-217F, N1  
 ground benign @ +25C)

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.