

General

The relay-based VXI-RMR46-40 coaxial microwave switching module provides a flexible medium density configuration for many applications. It contains multiple 40GHz relay sections for use in ATE stations, communication sites or other demanding applications requiring compact high performance microwave switching.

It provides up to four individual normally open 1x6 relay sections within a single C2 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

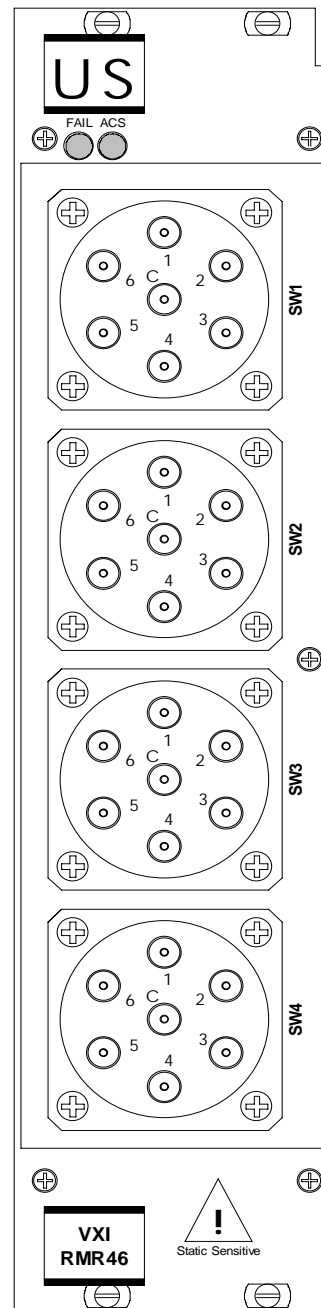
- Communication installations
- Antenna routing
- ATE systems
- Switching high speed ECL/PECL data
- Satellite control centers
- Ground station IF signal routing

Features

- Fast register-based control
- High reliability relay elements
- DC to 40GHz bandpass (min)
- Ultra performance stainless steel K-Type signal connectors
- Field replaceable plug-in relay elements
- Rugged aluminum shielded C2 sized enclosure
- Built-in control and status circuitry
- Individually shielded sections
- LabVIEW drivers included

Configurations

- VXI-RMR46-40-01 . . .Single 1x6
- VXI-RMR46-40-02 . . .Dual 1x6
- VXI-RMR46-40-03 . . .Triple 1x6
- VXI-RMR46-40-04 . . .Quad 1x6



Construction

The diagram below shows the overall physical configuration of the VXI-RMR46-40 module. The top and bottom of the module contains venting slots for flow through cooling for proper operation in extreme temperature environments. The rugged aluminum enclosure provides a shielded environment internally for low noise signals. The module also provides aluminum slides for additional grounding for host VXI mainframes that provide conductive module slides.

Easily accessible during installation, the module has both the Logical Address and IRQ/function DIP-switches located on the side of the module (detailed below). Also located on the side is a set of status LED's to indicate various module functions during troubleshooting.

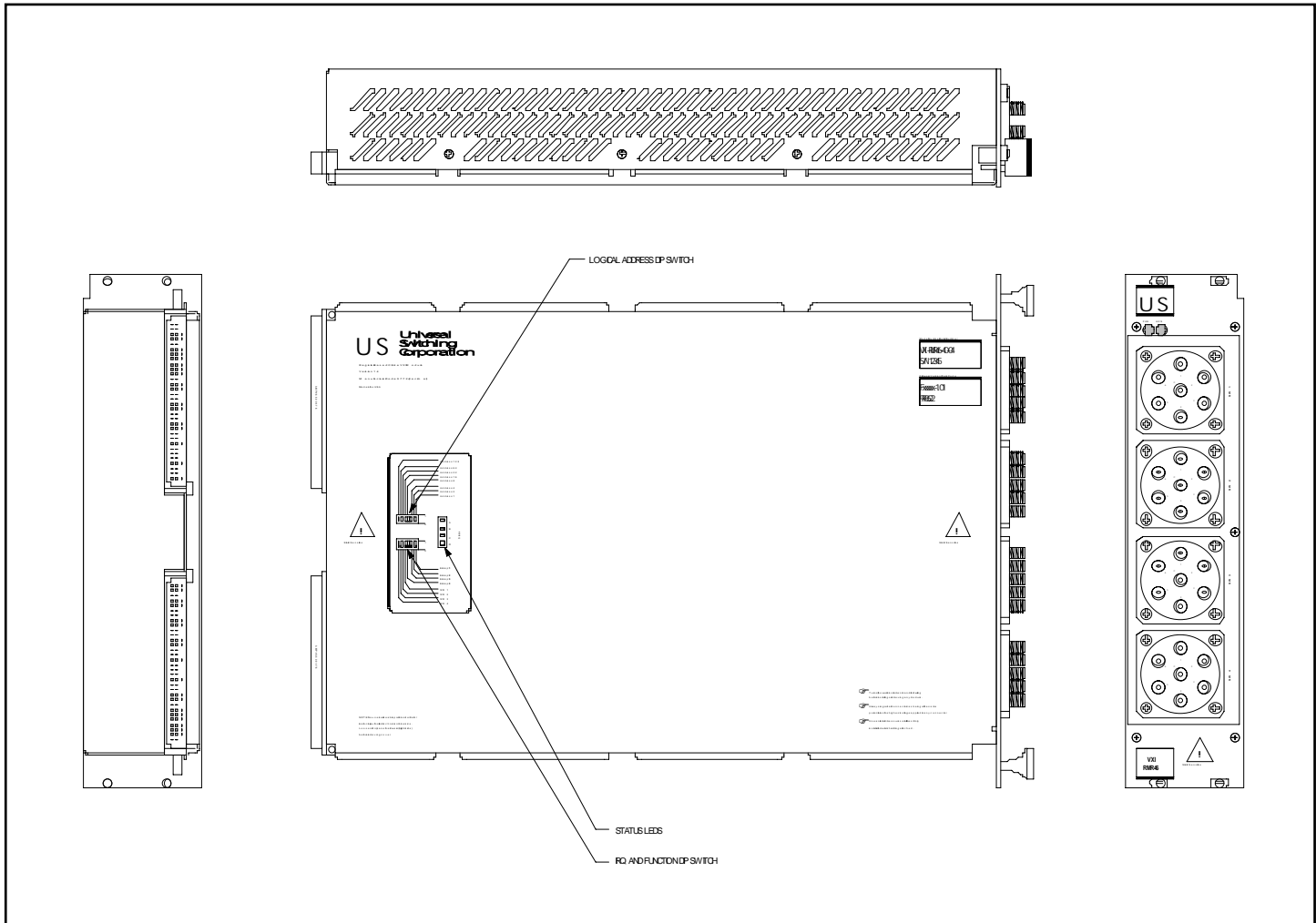
The module faceplate provides two additional status LED's. A red LED is labeled ERR to indicate error conditions, and a blue LED illuminates when the module is addressed by the VXI slot 0 controller.

Module control is register based providing fast easy control of the module's functions. LabVIEW drivers can be provided to simplify the control of the module.

Example Module Usage

Many different applications can be served by the switch 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. Many other possibilities can be realized when coupled with other VXI switching modules too. Interconnection cabling can be provided by the factory using high performance semi-flex cabling insuring the best possible performance.

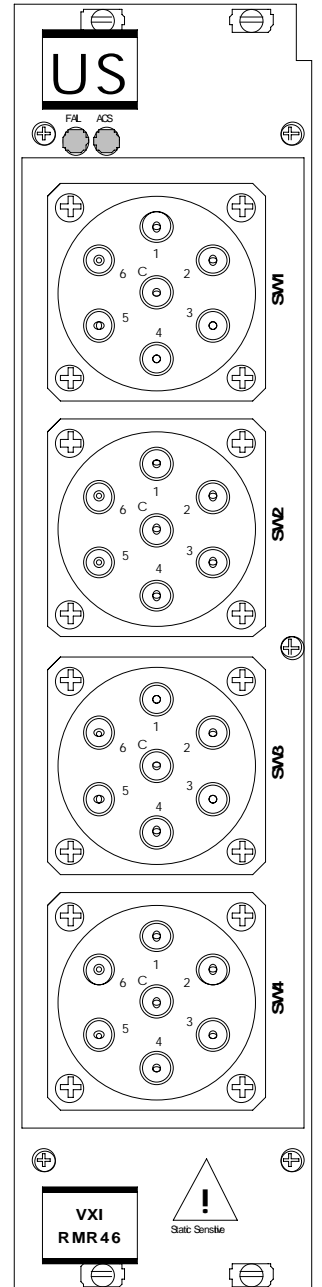
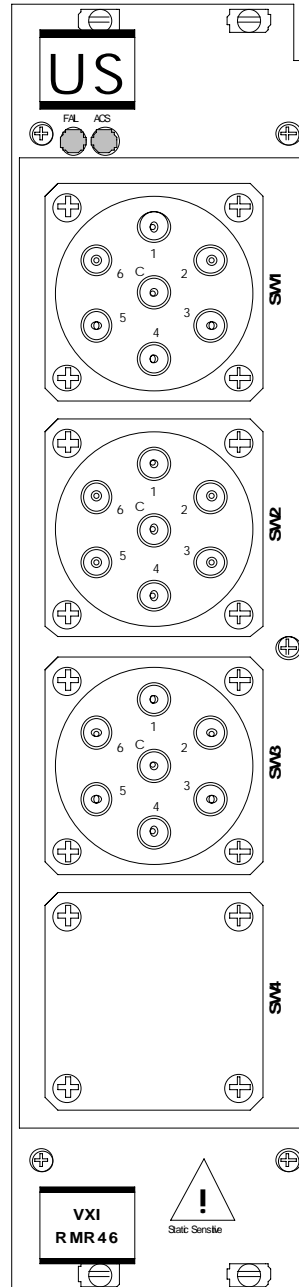
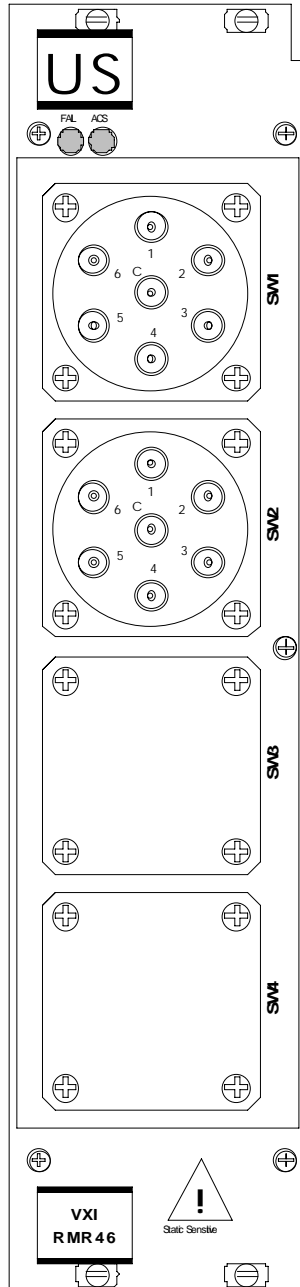
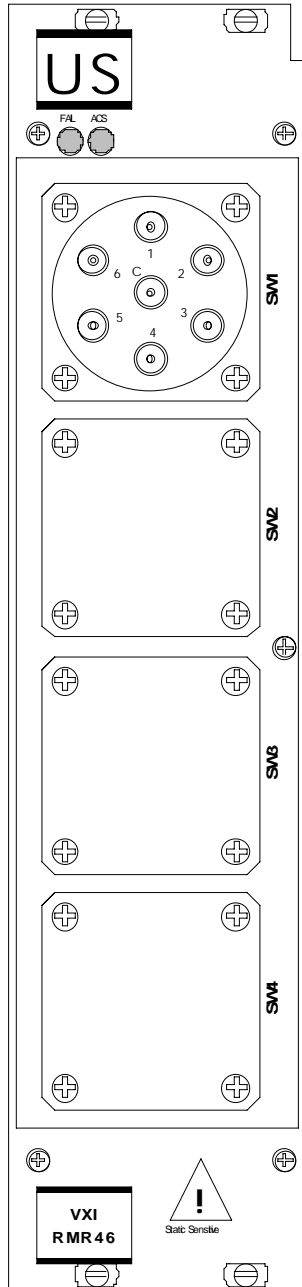


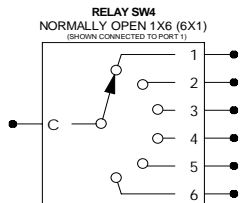
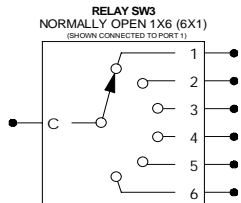
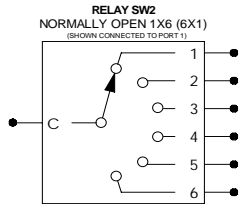
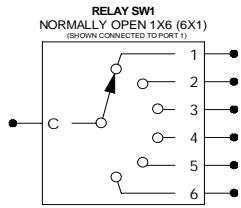
VXI-RMR46-40-01

VXI-RMR46-40-02

VXI-RMR46-40-03

VXI-RMR46-40-04





Signal Specifications

Switching elementsRelay-based
 Operating modeNormally open (no terminations)
 Ports per relay section . . .Six (1x6)
 Number of sectionsOne to four
 Signal typeAnalog, bi-directional
 Signal connectorStainless steel female K-Type
 Frequency rangeDC - 40GHz (min)
 Impedance50 ohm
 Insertion loss<0.40dB @ 12GHz
 <0.50dB @ 18GHz
 <0.70dB @ 26GHz
 <0.90dB @ 40GHz
 Repeatability<0.10dB max
 Crosstalk isolation (min) . . .>65dB @ 12GHz
 >60dB @ 18GHz
 >55dB @ 26GHz
 >50dB @ 40GHz
 VSWR<1.4 : 1 @ 12GHz
 <1.5 : 1 @ 18GHz
 <1.7 : 1 @ 26GHz
 <2.0 : 1 @ 40GHz
 Maximum power3 watts @ 40GHz
 Switching speed<50mS (plus control time)

General Specifications

Module sizeDual (C2)
 Control typeRegister based (V1.4)
 SparingField replaceable elements
 ConstructionShielded aluminum case
 Mating SMA torque8 inch pounds MAX
 DC power+5V @ 1A plus 125mA/closure
 +12V @ 310mA (50mS duration)
 Weight<4lbs
 Operating temp0 to +70C
 Non-operating temp-20 to +85C
 Humidity0 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.