

# 1 – 2 GHz SWITCH MATRIX SYSTEM

## TECHNICAL FEATURE

### FEATURES

- Configurable from 12 x 48 to 24 x 192
- Separate Transmit and Receive Path Switching
- Exceptionally High Intercept Performance for Minimum Signal Distortion



### PERFORMANCE

Operating Frequency .....1 -2 GHz

#### Receive Matrix

Gain.....20.5 +/- 2.5 dB

Typical Noise Figure (12x48)..... 25 dB typ

Output 3<sup>rd</sup> Order Intercept Point ..... +34 dBm min

#### Transmit Matrix

Gain.....-32.5 +/- 2.5 dB

Typical Noise Figure (12x48)..... 38 dB max

Input 3<sup>rd</sup> Order Intercept Point ..... +43 dBm min

#### Common Specifications

VSWR (all ports).....1.5:1 max

Isolation ..... 40 dB min

Control.....Keypad and remote TCP/IP

Power .....Dual 120 VAC single phase

Size .. 19" rack, 36" deep – 2 to 8 racks depending upon matrix configuration

Included Options:

- Patch panel – for testing and manual re-routing
- Redundant AC power supplies – hot swappable
- Independent Transmit and Receive control
- Advanced Built-in Test features
- Field expandable unit configuration

### DESCRIPTION

The 1 - 2 GHz Switch Matrix system is designed to be utilized in a satellite communications ground station application. This system sits between the up/down converters and the system modems in order to route the signals to their required paths. The system is designed to be expandable from a base configuration of 12 converters by 48 modems to a maximum configuration of 24 converters to 192 modems. This architecture can be used in a wide variety of installation sizes. Signal fidelity in the unit performance is critical, and this unit responds with exceptional isolation and intercept signal performance. This very high signal fidelity allows for many signals to be routed through matrix simultaneously, while not degrading the quality of the other signals being routed.

The unit is controlled using an advanced internal controller, communicating through both front panel keypad and display, and via Ethernet TCP/IP. Built in test features monitor signal paths as well as support circuitry for failures and provide recommendations for service.

This system can be custom configured for customer's individual needs. Please contact Crane Electronics for further details.

**Crane Aerospace & Electronics**  
Microwave Solutions – Signal Technology  
28 Tozer Road, Beverly, MA 01915  
+1.978.524.7200 • [mw@crane-eg.com](mailto:mw@crane-eg.com)  
[www.craneae.com/mw](http://www.craneae.com/mw)

The information in this document is a derivative of a document cleared by the Department of Defense (DoD) Office of Security Review (OSR) for public release. OSR case number 11-S-1325 dated February 23, 2011.  
Revision DS\_1\_2ghz Switch matrix system\_MW\_030211.doc. All technical information is believed to be correct but no responsibility is assumed for errors or omissions. We reserve the right to make changes in products or specifications without notice. Copyright © 2011 Crane Electronics, Inc. All rights reserved.

