EXPERIENCE
Custom designs and hundreds of standard units supporting the aerospace, military, transportation, and communications industries for signal routing and ATE applications.

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NEXT GENERATION SWITCH MATRIX PLATFORM
BETTER. FASTER. MORE MODULAR.

Design Philosophy
The Next Generation Matrix Platform is engineered around a flexible yet efficient modular system architecture comprised of a series of brackets, panels and electronic-boards that are universal among all Dow-Key electromechanical models. Commercial-Off-The-Shelf (COTS) solutions are not only cost effective, but can also easily be re-configured by adding RF switches to a single enclosure – from simple to complex combinations. This platform is easily repairable and field upgradable.

Modular Products Are More Cost Effective:
- Flexible and Efficient System Architecture
- Compact Physical Form
- Multiple Switch Configurations in One Box
- Same Software Control and Command Protocols Across Products
- Trouble-free Maintenance (repairability and field upgrades)
- Backward Compatible with Previous Models

New Platform in a Nutshell:
- 1RU/2RU/ 3RU/4RU rack mountable chassis – larger size as needed
- Easy Access to Power Supply & Control Card – the “brain” of the matrix resides on a single assembly
- Redundant Dual Power Supplies – available as an option
- Highly Sizable – can easily support smaller to larger RF switch configurations
- COTS Solutions – available “off the shelf” to solve time-sensitive switching requirements and offers low-cost solutions
- LCD/Keypad or Touch Screen manual control - type of control depends on the chassis size
- Remote controls: Ethernet (TCP/IP), HTTP Server, Lab View based GUI, RS-232 port, USB port, GPIB*, RS-485/RS-422 ports
- Faster Switching Time on System Level - 50 ms maximum
- Field Upgradable Firmware via boot loader*
- All electronic components and CAN bus switches are RoHS compliant
- EMI Shielded Ethernet, USB and CAN bus ports

*Available in mid-2012

Software Features:
The next generation platform gives the user more software capability, more network flexibility and more ways to control the switch matrix with the following key features:
- LCD with Keypad control for 1U switch matrices
- Touch Screen LCD for switch matrices 2U and larger in size
- Ethernet (TCP/IP), RS-232, USB, GPIB*, RS-485/RS-422 remote control interfaces
- LCD controller, Remote controller, and CAN bus patch panel – all reside on the same board for easier reparability.
- Faster switching speed: < 50ms (it can be improved further upon request)
- Built-in firmware to add, remove and program CAN bus switch ID for trouble free switch replacement
- Capability to recognize and display CAN ID of a switch with unknown ID for more user flexibility
- Keeps the count history of each position in every switch
- Boot loader to upload new firmware remotely*
- Built-in FTP protocol for “configuration” file transfers via HTTP, USB or COM ports

Ethernet (TCP/IP) Interface:
- RJ-45 port for Ethernet over TCP/IP, 10/100 Mbps (backward compatible with previous platforms)
- Access built-in HTTP Server (web-page interface)
- Manual or Dynamic IP address assignment
- Dynamic Host Configuration Protocol to turn “on” or “off”

Serial Interface:
- RS-232 port for the user to control the matrix remotely

USB Ports:
- USB port for the user to control the matrix remotely. The remote PC will treat the USB port as a RS-232 protocol.

CAN Bus port:
- CAN bus port to be used for custom solutions such as adding external switches to the switch matrix.

GPIB Interface – Available in 2012!
This remote interface will be available in mid-2012 and it will include all the same features as the Ethernet version with exceptions of HTTP and TCP/IP communication protocols.

Engineering Team
The best in the RF switch industry, Dow-Key’s engineering team is dedicated to support customers all the way from product selection, custom solution design to RF system integration and post product support. Team members who have been with Dow-Key prior to the establishment of this product line is still with Dow-Key and such experience is priceless, in which it allows us to provide customized solutions built per customer specs to meet all types of signal switching needs. Backed by decades of industry experience, our highly skilled technical staff is continuously improving the quality and variety of our product offering to meet the needs imposed by the RF industry. Our engineering team continues to be dedicated to work with the customer’s specific needs to create the optimum RF switching solution.

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Switch Matrix Styles

**MS-Series: Multiple Switches**

The MS-series allows the user to control multiple coaxial switches easily through software, and it gives the user the flexibility to add as many switches needed (limited to the size of the enclosure) on the rear panel starting with a 19" 1RU chassis up to 4RU (and larger enclosures for custom designs).

MS-models can be configured with the following types of switches:

- SPDT (by terminating one DPDT port to 1x2)
- Transfer DPDT (2x2)
- SP3T (1x3)
- SP4T (1x4)
- SP6T (1x6)
- SP8T (1x8)
- SP10T (1x10)
- SP12T (1x12)

- Switches can be mixed & matched
- Both terminated and non-terminated switches are offered but not with all switch types
- Normally Open & Latching switches are available
- Depending on switch type, 18 GHz, 26.5 GHz and 40 GHz switches are available

**MS-6101-ENET**

The MS-controller offers an ideal switch setup allowing the engineer to build his own matrix solution. The 1RU controller is outfitted with 24 RJ-11 plugs that support 24 CAN bus switches and can be expanded to support additional switches as needed. It has all the great software features as the other COTS models and is equipped with LCD/Keypad control on the front and Ethernet, RS-232, and USB on the back, and with redundant power supplies.

**MP-Series: Multiplexer**

Our multiplexer has the capability to route one input to as many as N outputs (it is bidirectional). It is offered with operating frequencies up to 18 GHz, 26.5 GHz and 40 GHz depending on the type of configuration needed.

Typical designs are 1x10 up to 1x100 MUX and can be customized to support a larger MUX.

**CB-Series: Crossbar**

For more complex test setups and signal routing, the CB-series crossbar matrix is an excellent choice. It allows testing multiple UUT (units under test) with many input/output signals or high-speed communication buses without having to connect and disconnect them from the setup.

A crossbar system can switch any input signal to any output port, such that the path between the I/O ports is unique at any given time.

**Typical switch solutions start from 2x2 up to 12x12 and can be customized to support a larger configuration.**

**FO-Series/ FI-Series: Fan-Out and Fan-In**

For more involving RF switching where the input ports need to be routed to all output ports simultaneously, a Fan-Out design is preferable. The design uses power dividers at inputs and amplifiers.

**An example would be our 4x4 up to 12x12 fan-out switch matrix, which can be customized with additional components or to support a larger configuration.**

A Fan-In switch matrix combines all the input signals and routes them to all outputs simultaneously. Thus, the design has amplifiers and combiners at the output ports.