# RJ45 Modular Patching Application Brief

Making reliable network configuration changes quick, clear and simple, the Dynetcom Modular RJ45 patch panel was designed in conjunction with the US Military for use in mobile systems being deployed around the world. Normal-through circuits provide primary connections that can be instantly redirected via patch cords which also provide visual confirmation of all temporary changes.


Operational Hightlights

- **Compact**— *24 normal through circuits per 2U, 19" chassis. Equipment connections via 48 rear RJ45 ports*

- **Plug and Play Redirection**– *Network changes accomplished by inserting a patch cord via 48 front patch ports—redirect back to normal operation by removing the patch cord*

- **One Panel Solution** - *Modular panel allows mixing of color coded Gigabit Ethernet, 10/100 Ethernet, T1/E1 and other voice/data modules in the same chassis.*

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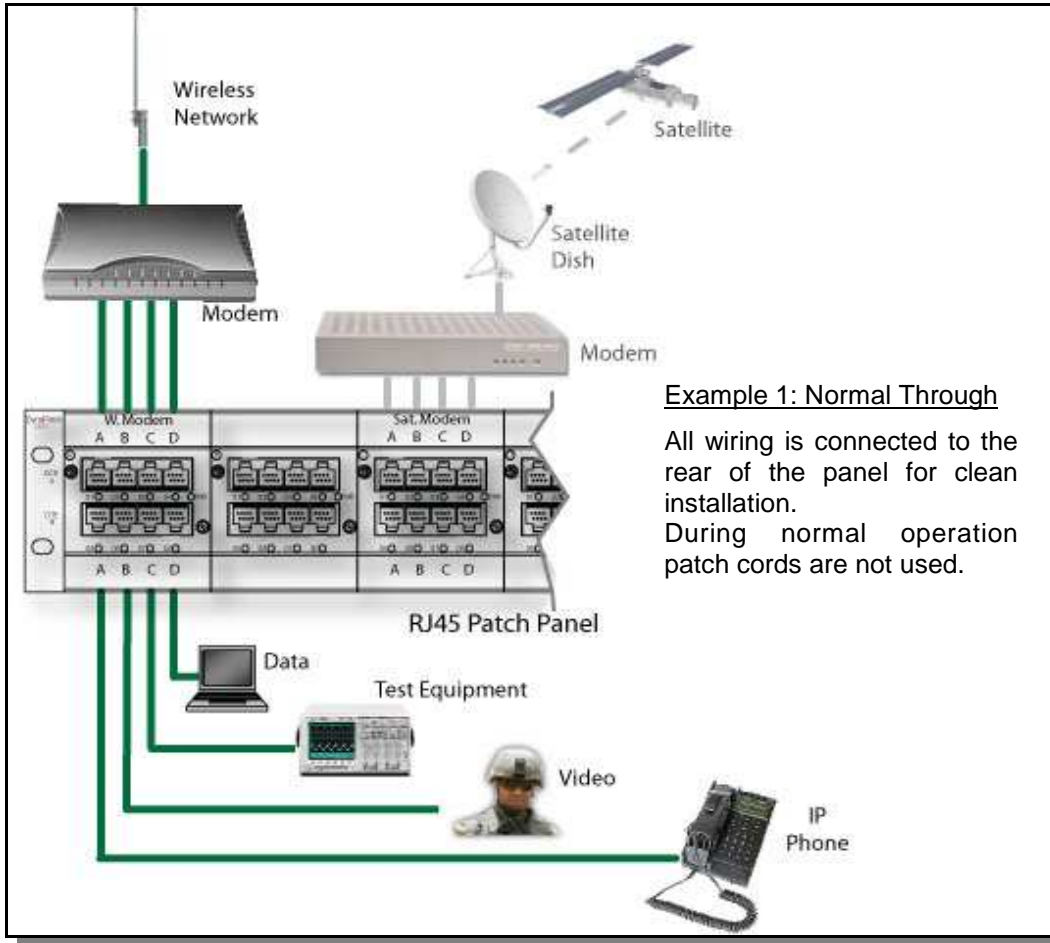
Example 1: Normal Through

All wiring is connected to the rear of the panel for clean installation.
During normal operation patch cords are not used.
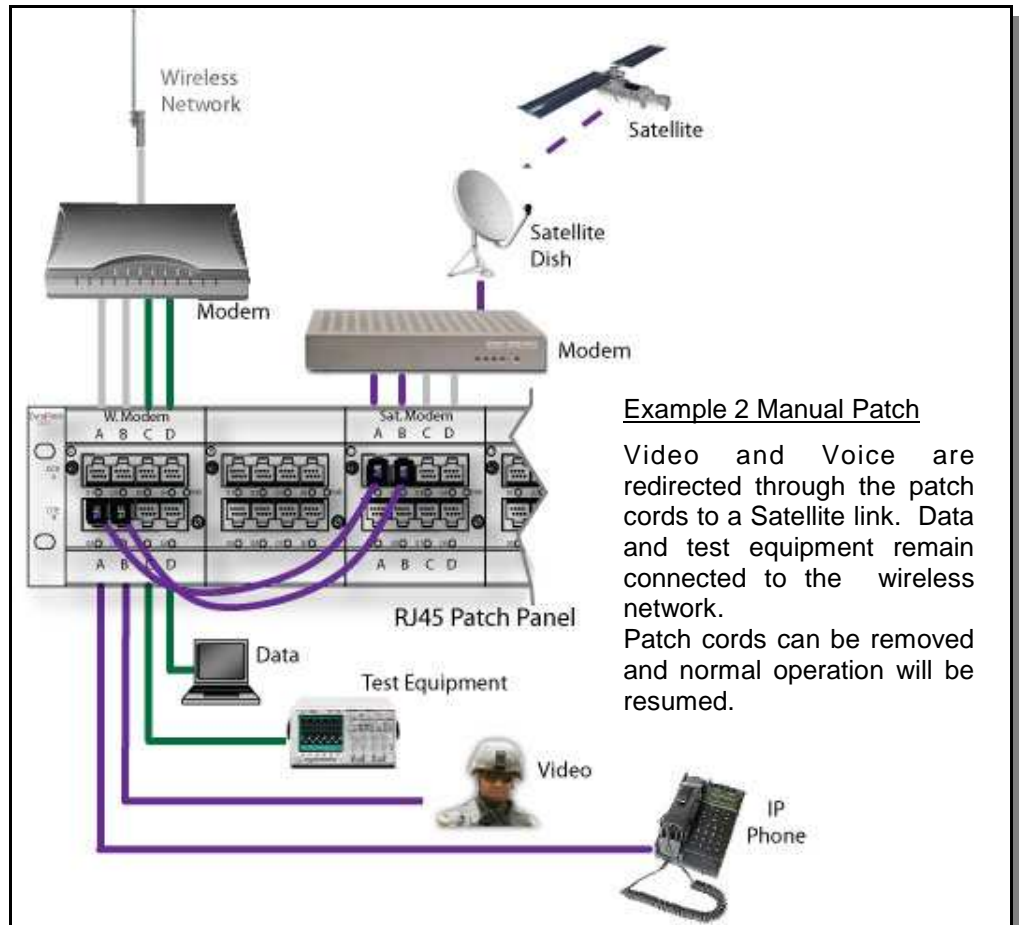
Example 2 Manual Patch

Video and Voice are redirected through the patch cords to a Satellite link. Data and test equipment remain connected to the wireless network.
Patch cords can be removed and normal operation will be resumed.

A Military Panel Designed for use in Deployable Systems

NSGDatacom's modular RJ45 patch panel is the design of choice used by the United States Marine Corps. in deployable systems, providing an initial clean installation requiring no visible wiring and the ability to rapidly reconfigure connections on location using patch cords. The flexible design allows a range of hot-swappable modules to be moved between panels for field upgrades and expansion. Specially designed label holders securely grip field replaceable labels which provide ample space for multiple port identifications. Port identifiers to the front and rear of each panel with optional color coding are used to provide additional delineation between individual circuits. Other features include port activity indicators, dual rear-mounted cable support bars, optional dual redundant power supplies, and optional end-to-end patch cord tracing for larger systems (using port specific push buttons and LEDs).

### RJ45 Modular Patch Panel (Front)

### Installing and Using the Modular RJ45 Patch Panel

Installing and using the RJ45 patch panel is quick and simple. To the rear of each of the modules are two rows of RJ45 sockets. In normal-through operation the top row of sockets is directly connected to the bottom row of sockets through relays. The top row is typically connected to the DCE equipment and the bottom row to the DTE equipment using standard Category 5 (or better) cables terminated with RJ45 plugs. Once installed, the normal through connection will support data direct communication between the DCE and DTE ports at date rates up to 1 Gigabit, (depending on the module type).

Inserting a patch cord into any one of the of the lower front panel RJ sockets allows the circuit to be monitored using standard test equipment without effecting the normal-though connection. Inserting the second end of a patch cord into any upper front patch socket will automatically cause the normal through connection to break and a new connection to be made through the patch cord. If the optional patch tracing capability is installed on the panel, pressing the small push button next to one end of a patch cord will illuminate an LED by the patch port at the other end of the patch cord. Patch cord tracing operates between multiple panels provided a common chassis earth is present. Two earth-wire terminal blocks are provided on each panel for this purpose.

Rear of Panel

Side View of Panel

Cable support Bar

Patch cord
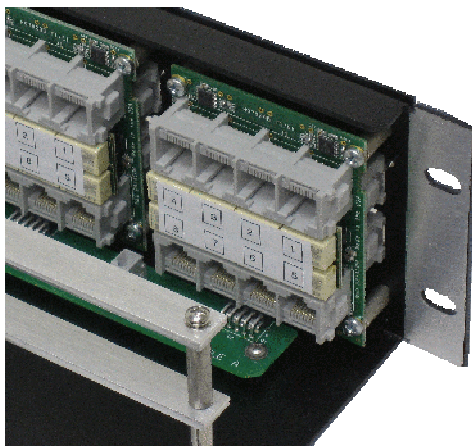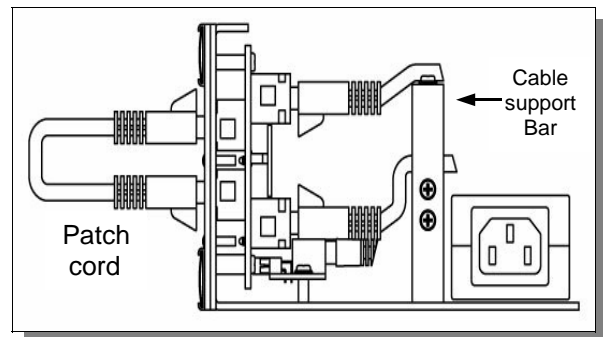
NSGDatacom, Inc. develops and manufactures a range of innovative telecommunications voice and data products for bandwidth optimization, network management and disaster recovery.

NSGDatacom offers the complete line of Dynetcom products (formerly Dynatech Communications); Tech Control / Cable Management, Twinax and Coax, and Enterprise Access System® (EAS). These products are used in government, military, and commercial environments.

- Patching and Switching products have been in use for more than four decades, originally developed under the name Cooke Engineering. The patching products offer flexible solutions capable of supporting the mixing of T1/E1, Ethernet, and Gigabit Ethernet modules in one chassis.

- Twinax products are used in Satellite tracking systems, and also by NASA for the Space Shuttle. The Coax patching products are being used in many radio and TV stations. Other customers are using them in radar installations and with other equipment operating over coax cables.

- Enterprise Access System® product line provides users a number of solutions for accessing networks for test and diagnostic purposes, both at local and remote locations.
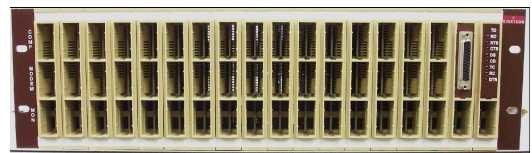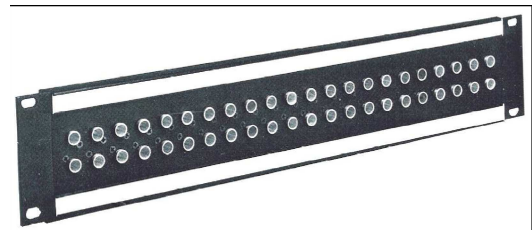
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