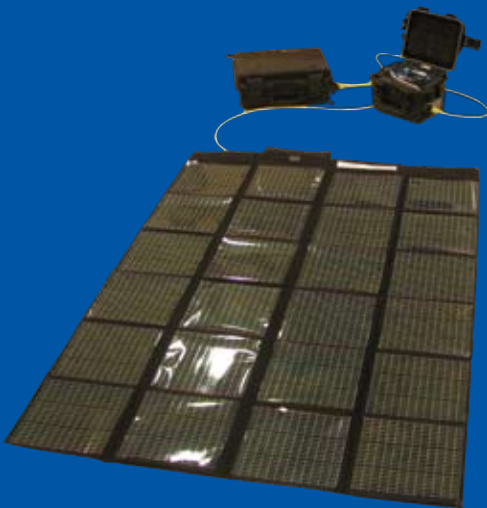


DE DANIELS™
ELECTRONICS LTD.

Transportable Radio Repeaters



www.danelec.com

Who we are and what we do



When a disaster strikes, you immediately race to the epicenter. To provide assistance to those affected, working communications systems are essential. Daniels Electronics helps you communicate. For over 50 years Daniels has provided customers around the world with highly reliable radio systems. Our transportable base stations and repeaters operate in rugged and extreme temperature conditions with low current consumption making them ideally suited for applications lacking AC power. Numerous customers rely on Daniels radios because when a disaster strikes, Daniels provides the communications you need.

Customers Include

Coast Guard

Canadian Coast Guard
United States Coast Guard

Emergency Management

FEMA
State of Arizona

Firefighting

Calgary Fire Department
Denver Fire Department
Vancouver Fire Department

National Parks

Parks Canada
United States National Park Service

Military

British Army
National Defense – Canada
MFO (Sinai peacekeeping force)
United States Marine Corps
United States Navy
National Guard

Police and Public Security

Homeland Security

Forestry

USDA Forest Service
National Interagency Fire Center
BC Ministry of Forests

Daniels Radios Were Used During

- 9/11 search and rescue
- Hurricane Katrina response
- Forest firefighting throughout North America
- Space Shuttle Columbia recovery operations

Applications Supported by Frequency

Description	Analog	Digital	29-50 MHz	VHF AM	132-174 MHz	380-520 MHz	806-869 MHz
Basic Repeater System	x	x	x		x	x	x
Crossband Repeater System	x	x	x	x	x	x	x
Radio Satellite Telephone Interface ¹	x		x		x	x	x
Ground to Air Crossband Systems	x	x	x	x	x	x	x
P25 Base Station		x			x	x	x
Analog Base Station	x		x	x	x	x	x
VoIP P25 Base Station with Digital Interface	x	x	x		x	x	x
Base Station Paging	x		x		x	x	x

Daniels radios have a modular design, enabling every radio system we manufacture to be custom configured for the exact application required by the customer. To discuss your requirements please contact the Daniels sales department.

¹ Inmarsat, Iridium

Basic Repeater



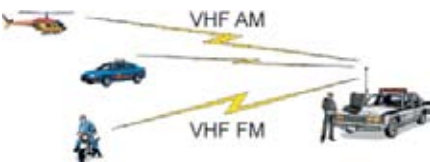
A basic repeater extends coverage beyond the range of a single radio. The Daniels transportable repeater is a self contained repeater that enables rapid deployment to extend coverage as needed to communicate over greater distances. Daniels repeaters are available in any of the frequency bands shown in the table on the previous page and also are available in either analog or P25 digital mode. A P25 Repeater System is capable of operating in analog, P25 digital clear, digital secure or mixed mode configurations.

Crossband Repeater



A crossband repeater system enables system interoperability by giving agencies who use different frequency bands the ability to communicate with each other. For example, a police department using a VHF radio may need to communicate with the local fire department on their UHF frequencies. The crossband repeater receives a VHF signal from the police department and then retransmits the signal on UHF to the fire department. Daniels crossband repeaters are capable of receiving and transmitting on any combination of frequency bands, AM, Lowband, VHF, UHF, or 800 MHz.

Ground to Air Crossband Repeater



A ground to air crossband repeater allows FM ground radios (VHF or UHF) to communicate with AM VHF radios in aircraft. This is ideal for providing ground based fire fighters or search and rescue crews with direct communication to supporting aircraft and helicopters.

Satellite Telephone Interface



A transportable radio repeater can be interfaced to a satellite telephone system¹ allowing communications to and from any location in the satellite network. Radio users in the field access the satellite telephone by a DTMF sequence and then use the satellite telephone to dial out to an outside line. The repeater can also be accessed from anywhere in the world by dialing into the satellite telephone system (a regional telephone number enabled for the satellite telephone).

Base Station

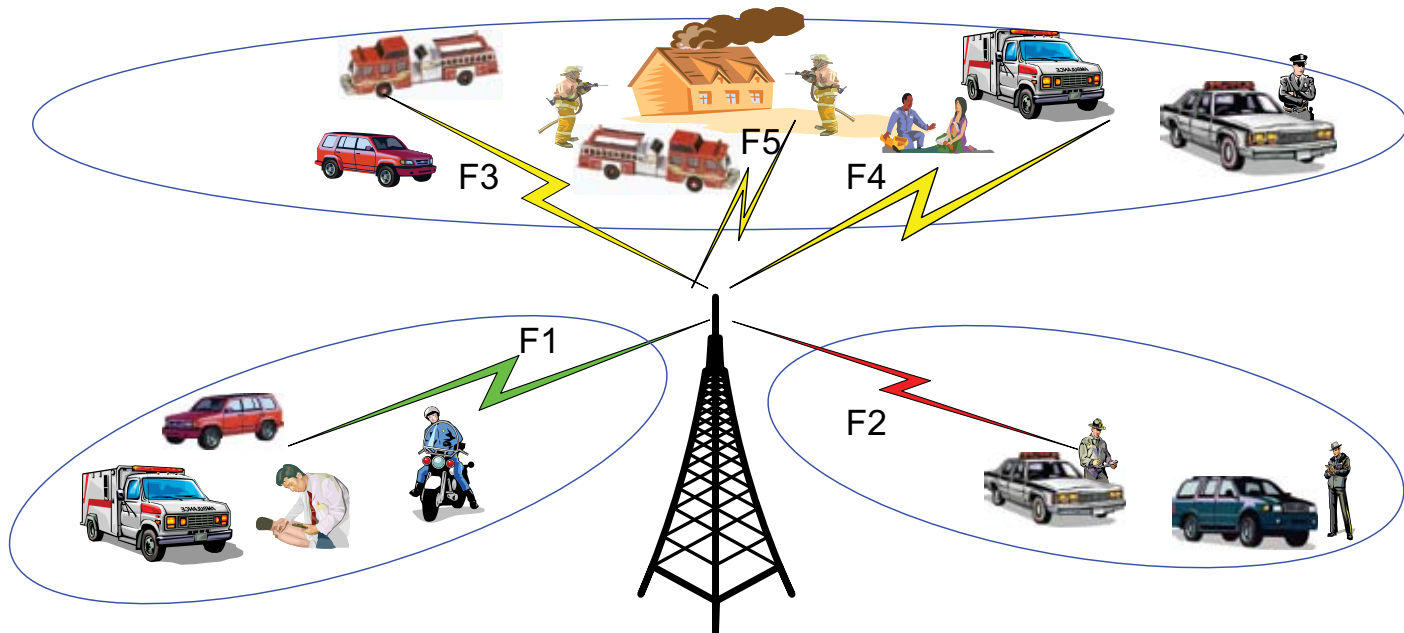


The transportable repeater can be configured for Base Station operation. When installed in transportable cases, base station radio systems are typically used at temporary command centers to communicate with mobile or portable-equipped radio users in the field. Daniels base stations are multichannel and can monitor additional channels with additional receivers.

Daniels Electronics offers a comprehensive family of repeaters and base stations to address over 20 different types of applications in 6 major frequency bands. To discuss an application or requirement not described here, please contact our sales department and we would be pleased to work with you in developing a customized solution.

¹ Inmarsat, Iridium

Trunked before Standalone



Five + One Channel P25 trunked
Standalone Base Station

Danelec Transportable P25 Five + One Channel Trunked Radio System

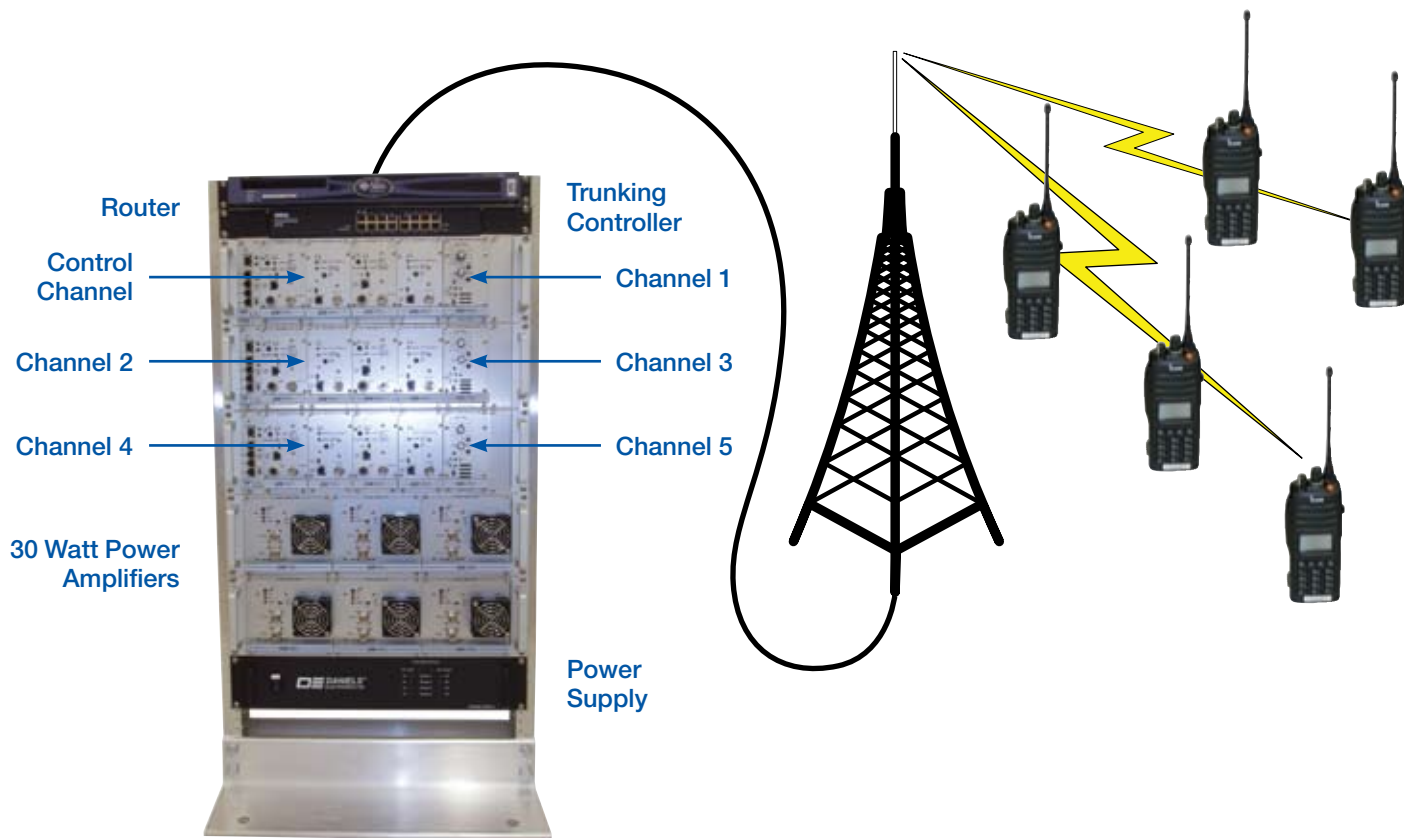
Danelec Transportable P25 Five + One Channel Trunked Radio System provides a small, compact, low power standalone system for customers requiring digital P25 communications for a large number of users from a single site. For Police, Fire or Utility applications, the Danelec Transportable P25 Five + One Channel Trunked Radio System is a complete radio system that can be quickly deployed on a temporary basis without necessitating complex network or console interfaces. The Transportable P25 Five + One Channel Trunked Radio System from Danelec builds on the existing MT-4E P25 Conventional Hardware platform with no changes to the RF hardware.

Applications

- Fire Fighting Agencies – Rural forest fire fighting agencies or combined urban fire agencies can benefit from a transportable trunked system that can be deployed onsite for a temporary basis. The system can be preconfigured and tuned to assigned frequencies for deployment when an emergency occurs.
- Police and Security Departments – Police and Security departments can benefit from a transportable trunked system that can be deployed onsite for a temporary basis whether it is for a search and rescue in an area poorly covered by the fixed radio network, or for temporary deployment during the visit of a dignitary or special conference. The system can be preconfigured and tuned to assigned frequencies for deployment at a moment's notice.

NEW!

Five + One Channel P25 Transportable Trunking – VHF, UHF, 800 MHz



The Daniels Transportable P25 Five + One Channel Trunked Radio System is configured in 5 subracks as shown above with a 1U industrial PC performing the function of the trunking controller. A Universal Interface Card (UIC) in each shelf provides the IP communication path between the radios and the trunking controller.

For temporary deployment by fire fighting agencies, police departments involved in search and rescue or security details setting up temporary communications to protect dignitaries, the Daniels P25 Five + One Channel Trunked Radio System can be packaged in a series of transportable cases for ease of deployment. A series of cases such as the one shown to the left will accommodate the RF racks and the industrial PC, while other cases can support power supplies / batteries, combiners and duplexers, and other cases can be filled with preconfigured handhelds.

ET-1 Polyethylene Case

Polyethylene (ET-1)

The Daniels ET-1 case supports a standard 19" Daniels subrack and has an internal mounting height of 6, 9, 12 or 15 RU. The case itself is weatherproof and constructed from high-density polyethylene with reinforced walls. It has recessed handles, smooth latches, anodized valances and a pressure relief valve. The rack is shock mounted and the lid gasket is watertight. Racks can be mounted inside the front and back of the case. Daniels subracks can be mounted back to back on both front and back racks. Optional duplexers can also be mounted inside the case. The 6 RU ET-1 case weighs approximately 20 lbs. (9.1 Kg) empty.

Application:

The ET-1 case is optimal for crossbanding applications. The case shown in the lower left is a crossband system for a county public safety organization that enables crossbanding between all of the frequency bands used by the various regional First Responders. This configuration supports Lowband, VHF, UHF and 800 MHz crossbanding from one or all bands. The ultimate interoperability solution.



Aluminum (ET-3)

The Daniels ET-3 case is a rugged, pressurized, waterproof, aluminum 19" transportable case accommodating one subrack. It features spring-retracted handles, smooth latches, a pressure-relief valve and desiccant. It is available in orange or black. Any standard 19" Daniels Electronics subrack can be mounted inside. In addition to the space for a 3U high subrack, the transportable case has a 2U space free for optional modules. The lid has a steel plate to magnetically mount an antenna. There are two optional versions of the lid to accommodate either an Iridium or Inmarsat satellite telephone interface.

Typically Used for:

Deployment in extreme environments, mountaintops, fighting forest fires.



Satellite Phone Option for ET-3 Case

There are different versions of the case lid to accommodate either an Iridium or Inmarsat satellite telephone interface.

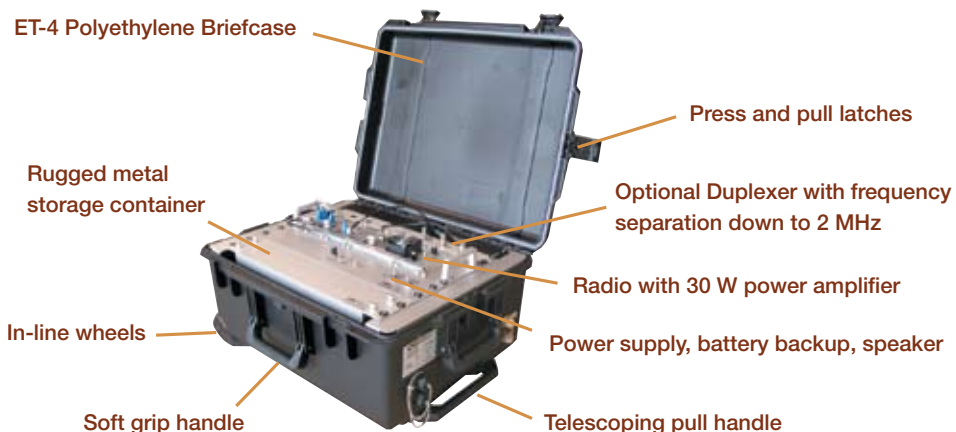


ET-4 Briefcase Repeater / Base Station



Polyethylene Briefcase (ET-4)

The Daniels Briefcase Repeater is a compact case that accommodates standard Daniels radio modules as well as an optional battery backup and duplexer. An interface connection on the side of the case provides access to the RF, DC and AC inputs. The case is rugged, waterproof, and easily deployed by one person. The case itself is constructed from high-density polyethylene with reinforced walls. It has fold-down handles and anodized valances.



Note that the case may be sold separately or as part of a package with the Accessory Box and Power Module.

Briefcase Repeater Package (ET-4-A09-01) includes:

Polyethylene Briefcase (ET-4-A09-00)

- Rugged case with 9 RU of space, wheels, telescoping handle, and an interface connection on the side to provide access to RF, DC and AC inputs.

Power Module (PSA-12-09-RB-20)

- 6W Speaker
- Integral AC-DC power converter and battery charger. The power converter accepts 90-260 VAC and provides a trickle charge for the integral battery cell.
- AGM battery (PSB-P-12V10A502) providing 10.5 AH backup at a 10% duty cycle that equates to approximately 12 hours of operation. Note: An external battery pack can also be connected.

Accessory Storage Box (ET-4-A-ACC-BOX)

- A 2 RU optional accessory case is available that provides storage space for cables and any tools (microphones, screwdrivers, procedure manual, etc) you may desire to include in your rapid response package.

Note: The case may be sold separately or as part of a package with the Accessory Box and Power Module.



The Daniels ET-5 Tactical Repeater is a smaller version of the Daniels ET-4 Briefcase Repeater. Both units are shown below true to scale for comparison. The Daniels ET-5 Tactical Repeater is housed in a weatherproof, rugged polyethylene case that will withstand the rigors of transport and rapid deployment in all conditions. The ET-5 provides a lightweight compact package ideally suited for undercover and surveillance applications where repeating of encrypted P25 communications is vital to the operation.

Available for any Public Safety frequency band and deployable in minutes the ET-5 Tactical Repeater can provide up to 19 hours of operation with D-Cell alkaline batteries. Internally the repeater consists of standard Daniels MT-4E transparent P25 Transmitter and Receiver modules offering up to 6 Watts of RF output power – VHF / UHF (3 Watts for 800 MHz operation).

Application:

For agencies that require compact P25 repeaters supporting transparent encryption in VHF, UHF or 800 MHz bands the ET-5 provides the smallest footprint of any transportable P25 repeater. It operates with standard alkaline D-Cell batteries that are available at any retail store as well as rechargeable lead acid batteries. The Daniels Electronics ET-5 Tactical Repeater is specifically designed to meet the needs of body wire repeating for undercover operations and other surveillance operations where radio communications providing stealth, compact size for unobtrusiveness and rapid deployment are vital.

Key Features of the ET-5 Tactical Repeater Include:

- Adheres to the P25 standards TSB-102 and EIA-603
- Available in VHF, UHF or 800 MHz frequencies
- Transparent passing of P25 encryption (e.g. AES or DES-OFB)
- No double vocoding of the P25 signal
- True end-to-end digital integrity
- Runs on D-cell alkaline batteries or other rechargeable batteries
- Supports up to 19 hours operation with alkaline D-Cells
- Available with 0.5 – 6 Watts of RF output power – VHF, UHF 0.5 – 3 Watts RF output power – 800 MHz
- Weighs only 20 lbs (9 kgs)
- Compact case 14" x 11" x 6" (36 x 29 x 16.5 cm)
- Available with integral 4.5 MHz duplexer – VHF, UHF (45 MHz – 800 MHz)

ET-4 Briefcase Repeater



ET-5 Tactical Repeater

Shown to scale

NEW!

ET-6 30 Watt Stealth Repeater

ET-6 30 Watt Stealth Repeater

The Daniels ET-6 30 Watt Stealth Repeater is the newest addition to the Daniels family of transportable cases. Its size is between the ET-4 and ET-5. Like its two brothers it supports standard Daniels radio modules (VHF, UHF, 700 MHz or 800 MHz) along with a 30W PA and duplexer. The ET-6 can be configured for either repeater or base station operation.

A key difference of the ET-6 compared with the ET-4 and ET-5 is there are optionally no external connectors or markings making this a truly stealthy case for police surveillance operations. All connections (RF, DC, AC) are optionally located inside the case on an easy to access connection panel. The case is rugged, waterproof, and easily deployed by one person with a fully loaded weight of less than 40 lbs. The case itself is constructed from high-density polyethylene with reinforced walls. It has fold-down handles and anodized valances.

Application:

For agencies that require compact P25 repeaters supporting transparent encryption in VHF, UHF or 800 MHz bands the ET-6 provides a compact 30 Watt repeater that is unobtrusive. The Daniels Electronics ET-6 30 Watt Stealth Repeater is specifically designed to meet the needs surveillance operations where unobtrusive radio communications and rapid deployment are vital.



NEW!

60 Watt Solar Panel Package

Daniels has introduced a new version of its popular solar panel package. Packaged in a compact polyethylene case the solar panel is lightweight, easy to carry and offers either 60 or 120 Watts of power. The Solar panels are rugged, compact, lightweight panels that unfold to a size of 6' x 4' yet fold up into a package that is the size of a laptop. Optionally a second solar panel can be tandemed together and stored in the same Pelican case.

The Solar panel package consists of the following assemblies:

- 6' x 4' solar panel that folds up to 8" x 10"
- Cables for direct connection to the Daniels battery box and transportable radio repeaters
- Rugged Pelican (16" x 12" x 6") case for ease of storage and transport
- Tent pegs to secure the solar panel to the ground
- Bungee cords to hang the solar panel in a tree
- Rubber mallet
- 50" of rope
- Compass



Battery Backup



An additional 35 AH external battery is available for all transportable cases. This allows approximately 36 hours of operation. An interconnect cable is then used to connect to the transportable repeaters (as shown at left).

Antenna and Mast System

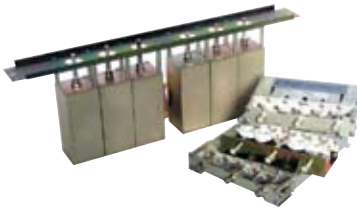


Collapsible Antenna Mast

Daniels sells a rugged collapsible aluminum antenna mast tripod which is ideal for rapid deployment. The mast is supplied with a duffle bag with wheels, all necessary tools, pegs and guy wires. Various heights are available from 2 to 15 metres (6 to 49 feet).

Antenna

Daniels can provide a wide variety of antenna for any transportable application including flexible whip and Yagi antenna.



Duplexers

Accessories Available

Anti-Vibration Module Fastener System (SA-VIB-22)

The Anti-Vibration kit includes threaded inserts for each module in the Daniels subrack to replace the standard spring-loaded fasteners. This provides protection against modules becoming unscrewed from the subrack due to vibration.

Mobile Duplexers

A variety of Mobile Duplexers are available. VHF duplexers may support a frequency separation between TX and RX as close as 2 MHz.

Should you have other requirements for your rapid deployment application, contact Daniels.

Feature	ET-1	ET-3	ET-4	ET-5	ET-6
Size (inches)	18.5" x 26.5" x 32	15" x 11" x 21"	14" x 20" x 25"	14" x 11" x 6"	
Weight (lbs)	50	35	50	20	40
Colours	Black	Orange or Black	Black, Yellow or Orange	Black	Black
Rack Units	6U – 15U	5U	9U	TX/RX only	TX/RX/AMP
Waterproof	Weatherproof	Yes	Weatherproof	Weatherproof	Weatherproof
Stealth	No	No	No	Yes	Yes
Integrated Battery	No	No	Yes	Yes	No
D Cell operation	No	No	No	Yes	No
Antenna Mount	No	Yes	No	No	No
Internal Power	Up to 60A	9A	9A	N/A	N/A
External Power	AC / DC	AC / DC	AC / DC	DC	AC / DC
Duplexer Options	500kHz, 2 MHz, 5 MHz	2 MHz, 5 MHz	2 MHz, 5 MHz	5 MHz	5 MHz
Pressure Release Valve	Yes	Yes	No	No	No
Satellite Interface	No	Optional	No	No	No
Construction	Polyethylene	Aluminum	Polyethylene	Polyethylene	Polyethylene

To be set up in a matter of minutes, it provides your agency with an instant solution to any communication challenge.

- Rapidly Deployable
- Rugged
- Daniels Reliable
- Modular
- Compact
- Light
- Operates from -30°C to +60°C
- Uses standard Daniels RF Modules
- Low current consumption ideal for battery backup
- Available in a variety of repeater configurations
- Supports frequency bands from 29-869 MHz
- Analog, Digital P25 (Clear or Secure)
- Choice of Case type
- Waterproof, Shockproof, Vibration proof
- Iridium or Inmarsat Satellite telephone interface option
- Optional Solar Panels, Battery Backup and Antenna

Contact Daniels today to discover how we can help you help others.

Transportable Cases



ET-1 Polyethylene



ET-6 30W Stealth



ET-3 Aluminum



ET-5 Tactical



ET-4 Briefcase

Daniel
43 Erie
Phone
Fax: 1



**Wadsworth
Sales Inc.**

Bryan Wadsworth
Cell 815-790-4494
Fax 815-363-6056

www.wadsworthsales.com

(International)
(International)