



SUMMER 2012 DANIELS ELECTRONICS NEWSLETTER

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Product Announcements

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Daniels P25 Voter now supports P25 Simulcast Operation

The Daniels Electronics P25 voting system now supports analog or P25 voting as well as P25 simulcast operation. Based on the versatile MT-4E radio platform, the Daniels digital P25 voter now offers an enhanced level of functionality for conventional P25 applications.



For extended or improved coverage, multiple receivers can be installed on the same frequency. When the Subscriber Unit transmits, many (and possibly all) of the receivers may hear the transmission depending on the location of the Subscriber Unit. The voter will then determine and select the "best" received signal from all the signals received. The best signal is then rebroadcast from the base station transmitter allowing improved talk-back capability between mobiles in the field. Each local receiver's received signal is back-hauled to the voter and transmitter base station via IP links (Microwave or wired).

As shown in the diagram below for a 3 site voted system with a single transmitter, each receiver receives the signal from the Subscriber Unit. These signals are then evaluated and compared, and the best possible representation of the signal received is passed to the Daniels P25 voter.

For P25, each traffic packet received includes the Bit Error Rate (BER) detected by the receiver which is used by the voter to determine the relative quality of packets between the multiple streams received. An analog voice signal has no error detection; therefore the only measure of quality is the received signal strength indication (RSSI). This process is performed continuously as the quality of the received RF signal varies at each of the different receivers. The Daniels Voter has a "good quality threshold" which defines the analog signal quality level above which no switching will be done to reduce unnecessary switching of channels.

The Daniels P25 Voting system also supports simulcast operation allowing a single P25 signal to be simultaneously broadcast using two or more geographically separated radio transmitters. For each transmission in the simulcast system, the Simulcast Controller sends the same signal with a timing offset with respect to a 1 Hz synchronization reference to each transmitter via an IP network.

Each Simulcast transmitter is configured with an additional timing offset that may then be applied to the transmitted signal, allowing tuning of the system by geographically shifting areas where the signals are destructively reinforcing. A network time protocol (NTP) from a GPS or an Internet connection is required for proper simulcast operation.

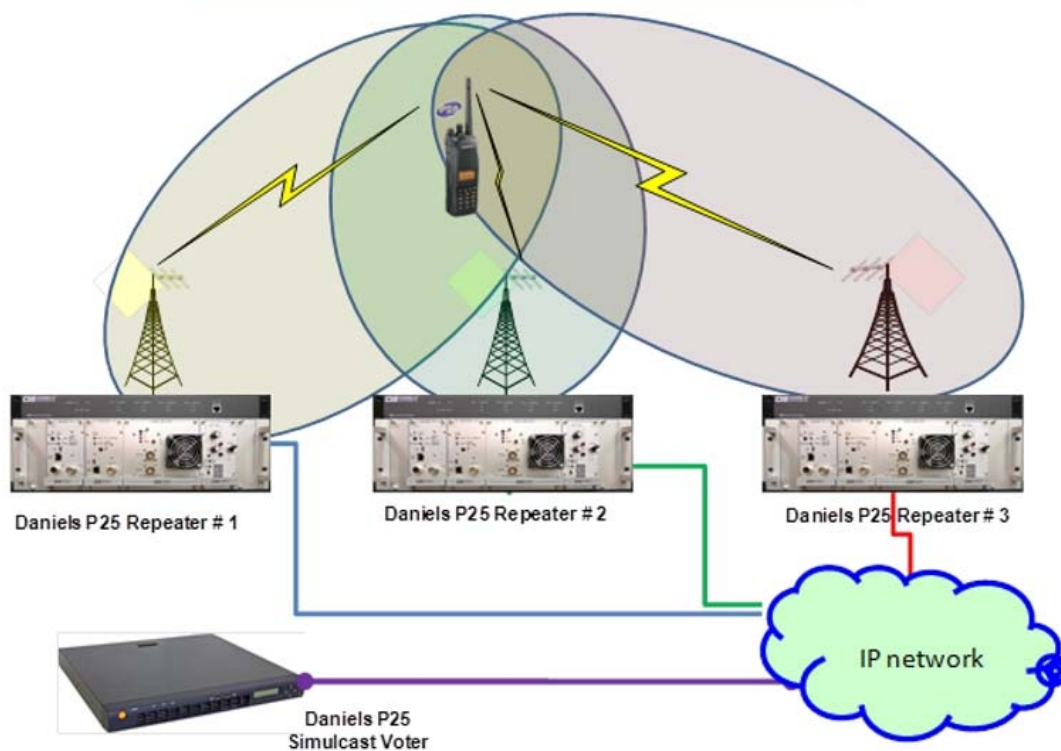
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Daniels Electronics P25 Simulcast Solution

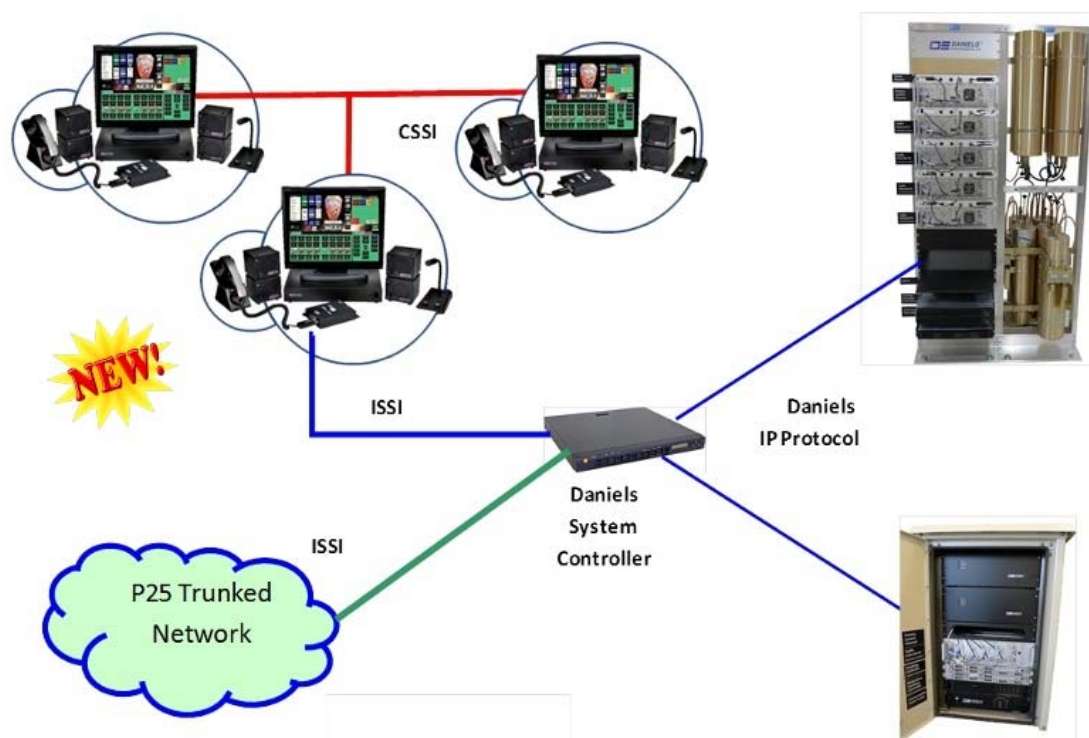


The Daniels P25 Voting / Simulcast system is based on the versatile and proven MT-4E conventional radio system. P25 Voting requires no changes to existing MT-4E radios and is supported in all the P25 frequency bands (VHF, UHF, T-Band, 700 and 800 MHz). As shown in the diagram above, each Receiver site consists of a Daniels Receiver subrack along with the Daniels Voter. An industrial PC then receives all the voted received signals and sends the result to the transmitter site. The Industrial PC also provides the programming and System Monitoring statistics.

To learn more please refer to our website http://www.danelec.com/applications/other/digital_voting.asp or contact Daniels at sales@danelec.com.

Daniels P25 Multi-site Trunking with ISSI

Daniels Electronics is now offering its new P25 Multi-site trunked solution supporting the Inter Sub System Interface (ISSI). Building on our existing Standalone P25 trunked system, the multi-site capability now enables Daniels to build small multi-site networks for Public Safety agencies or provide an open ISSI interface for end of the network and dead zone infill for large agency and state wide networks. Daniels is offering a solution that is complementary, for end of the network applications (our long established niche in the market) and small capacity infill where the Daniels advantage of low power, small size, low weight and rugged operation offer an advantage to use Daniels for these niche remote and difficult applications.



The Daniels P25 Trunked Radio System supports the Inter Sub-System Interface (ISSI) offering interconnectivity to other P25 trunked equipment:

- ISSI to the Console subsystem
- ISSI connectivity between Daniels Trunked Radio Sites
- ISSI connectivity to another vendor's Radio Frequency Sub System (RFSS) for end of the network connectivity or dead zone infill

The Daniels P25 Trunked Radio System is configured with one channel per subrack as shown below left and two 1U industrial servers performing the function of the redundant trunking controller. A Universal Interface Card (UIC) in each shelf provides the IP communication path between the radios and the trunking controllers. Daniels offers its P25 Trunked Radio System in three main configurations:

1. **7' Rack for Fixed Installations** - For permanent fixed site applications such as a small town police force or a power plant, the Daniels P25 Trunked Radio System can be mounted in a standard 19" 7' equipment rack as shown below, left.
2. **Transportable Cases** - For temporary deployment by firefighting agencies, police departments involved in search and rescue or security details setting up temporary communications to protect dignitaries, the Daniels P25 Trunked Radio System can be packaged in a transportable case for easy deployment. Cases, such as the one shown below, center will accommodate the RF racks, the industrial servers, power supplies, power amplifiers, combiners and duplexers and other cases can be filled with preconfigured handhelds. This is very similar to our existing conventional P25 briefcase repeater but offers increased traffic capacity.
3. **3' Outdoor Pole Mount for Cell Site Infill** - For permanent small channel fixed site applications such as highways, or urban dead zones, the Daniels P25 Trunked Radio System can be mounted in a standard 19" 3' outdoor pole mount equipment rack as shown below, right.



New Frequency Band - 900 MHz

Daniels Electronics has completed FCC and IC compliance and begun commercial shipments of its new 900 MHz MT-4E radio operating in the frequency band 896 – 960 MHz. The 900 MHz MT-4E radio is a high performance, low current FM radio capable of P25 digital (for linking) or analog operation in 12.5 kHz channels as well as 900 MHz paging applications. P25 operation is supported via a purchasable P25 firmware option. The 900 MHz MT-4E modules provide:

- Software programmable
- 3 Watts output power (100% duty cycle)
- USB plug for programming and firmware upgrades
- Purchasable firmware upgrade from analog to P25 digital now or in the future
- Used for Repeater, Base Station or Paging applications



For full details visit the Daniels website:

<http://www.danelec.com/products/rfmodules/>

Inventory Sale – Black ET-3 Cases

Daniels is offering a one time inventory sale on:

- The Daniels Black 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 a desiccant. Any standard 19" Daniels Electronics subrack can be mounted inside. In addition to the space for a 3U high subrack, the transportable has a 2U space free for optional modules. The lid has a steel plate to magnetically mount an antenna.
- Current list price for the ET-3-03-05 is \$3,025 US. Special promotional price is \$1,500 US. Act now as quantities are limited.



FCC Narrowbanding Mandate – January 1, 2013

If you are looking for replacement equipment to meet the January 1, 2013 narrowbanding mandate, then Daniels has a family of FCC registered VHF and UHF base stations and repeaters that support wideband, narrowband and cross-band operation.

<http://www.danelec.com/products/rfmodules/transmitters.asp>

Our repeaters are available in either analog, P25 or mixed mode operation and can be configured for any output power level. Our products are available on a variety of state contracts including WSCA and GSA. If you would like to learn more about our products or receive a quotation for a replacement system please contact the sales department sales@danelec.com.

P25 FSI with Moducom

Daniels Electronics and Modular Communication Systems, Inc. are pleased to announce the development of a P25 standards-compliant Digital Fixed Station Interface (DFSI) between their products, enabling direct digital connection from the Daniels LMR radio to the Moducom dispatch consoles, in accordance with the TIA P25 Fixed Station Interface (FSI) standard.

The Daniels digital Universal Interface card (UIC) provides the P25 DFSI connection via Ethernet from the Daniels MT-4 P25 radio system to other LMR subsystems, such as IP-based dispatch consoles in a P25 network. In accordance with the TIA P25 general system model, this interface interconnects the fixed station (Daniels Radio) to a console or RF subsystem at the Ef connection. The Ethernet universal interface provides the P25 encoded (and optionally encrypted) digital audio signal directly to the console, as well as a comprehensive suite of control signals. This allows the dispatch console to see and manage all information associated with a call in an IP format, including unit and emergency IDs.

We are very pleased to be able to offer a P25 digitally compliant interface to communicate with the Moducom consoles," says Robert Small, President and Chief Operating Officer of Daniels Electronics. "Moducom and Daniels are delivering on the promise of P25 standards beyond the common air interface (P25 CAI), benefiting public safety agencies through choice of vendor and improved communications to address their interoperability requirements."

Moducom recently unveiled Ultra-Com IP25, the latest version of its E911/radio dispatch control system that now supports the Project 25 Digital Fixed Station Interface (DFSI). In addition to the system's standard features — E911 dispatching, mapping and an IP-based architecture that is ready for the eventual migration to next-generation 911 technology — Ultra-Com IP25 is capable of encrypting and decrypting audio, and of storing multiple authentication keys.



Daniels is Awarded a 5 Year Contract With US DHS -TACCOM

Daniels Electronics was recently awarded a five year contract with the US Department of Homeland Security for the supply of digital public safety radio systems under the multiple award indefinite delivery and indefinite quantity (IDIQ) \$3 Billion Tactical Communications (TACCOM) contract. This contract will provide government public safety agencies with digital public safety radios using Daniels latest generation of firmware based digital radio technology.

This contract will be used by a number of US government agencies over the next 5 years to expand and upgrade their government's radio networks to provide state of the art digital communications for the first line public safety responders.

"Daniels is very pleased to be awarded this substantial contract with the US government and to be able to provide advanced digital communications in support of public safety." says Robert Small, President and Chief Operating Officer of Daniels Electronics.

Canadian P25 Roadshow

In September, Daniels will be conducting a 5 city P25 training road show. The focus of the ½ day seminar will be an update of the P25 standard with emphasis on recent developments in the P25 trunking standard, ISSI & FSI IP interfaces as well as the ultra narrowband Phase II standard development. Cities included in the road show are:

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|----------------|-----------|------------------|
| • September 24 | Halifax | Marriott |
| • September 25 | Ottawa | Hampton Inn |
| • September 26 | Toronto | TBA |
| • September 27 | Edmonton | Courtyard |
| • September 29 | Vancouver | Hilton Metrotown |

To learn more or register for these free training sessions contact sales@danelec.com.

Sales Department Changes

In May, David Wegelin retired after 10 years with Daniels, he will be missed and we wish Dave all the best in his retirement. To counter Dave's departure and as Daniels continues to grow we have recently strengthened the Sales team by moving experienced people from other Daniels departments in to Sales to provide you the knowledgeable, friendly and helpful support you are used to from Daniels. Please welcome:

- | | |
|------------------|----------------------|
| • Karen Boot | Inside Sales Support |
| • Lynda Veilleux | Inside Sales Support |
| • Przemek Mroz | Technical Sales |
| • Paul Ardila | Technical Sales |






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Available Product Literature

Daniels has an extensive library of marketing and technical literature available on our website:

<http://www.danelec.com/library/english/>

The following new documents are now available on the website:

Document	Image	URL
Transportable Planning Guide		http://www.danelec.com/pdfs/MKT_117_Transportable_Repeater_Guide_V3.0.pdf
2012 Product Catalog		http://www.danelec.com/pdfs/Daniels_2012_Product_Catalog_Jan_2012.pdf
2012 Trunked Brochure		http://www.danelec.com/pdfs/Trunked_Brochure_Jan_2012.pdf
Voting Brochure		http://www.danelec.com/pdfs/Daniels_P25_Voting_Brochure.pdf
P25 Training Primer		http://www.danelec.com/library/english/p25_training_guide.asp

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Upcoming Events

Daniels in conjunction with its regional sales representatives and authorized dealers will be participating at the upcoming industry events in 2012:

Dates	Logo	Tradeshaw	Location	Web
August 19 - 22		APCO International	Minneapolis	http://www.apco2012.org/ Free Exhibit Hall Pass (Promotion Code - MGFK2300) https://s3.goeshow.com/apco/annual/2012/registration.cfm
November 05 - 08		APCO Canada	Winnipeg, Manitoba	http://www.apco.ca/conferences_e.html
December 04 - 05		RadioComms	Melbourne, Australia	http://www.radiocommsconnect.com.au/

Upcoming Technical Training Courses

The Daniels training department has the following training courses planned:

October 23, 2012	Radio System Basics and RF Fundamentals Course
October 24 & 25, 2012	MT-4E Analog and P25 Digital Radio Systems Course
	Courtyard Marriott Las Vegas South 5845 Dean Martin Dr. Las Vegas, NV 89118
November 20, 2012	Radio System Basics and RF Fundamentals Course
November 21 & 22, 2012	MT-4E Analog and P25 Digital Radio Systems Course
	Four Points by Sheraton Vancouver Airport Richmond, BC, Canada

Please contact Daniels Training Section at training@danelec.com or 1-800-664-4066 for more information or to reserve your seat. If you know someone who might be interested in this course please pass this invitation on to them.

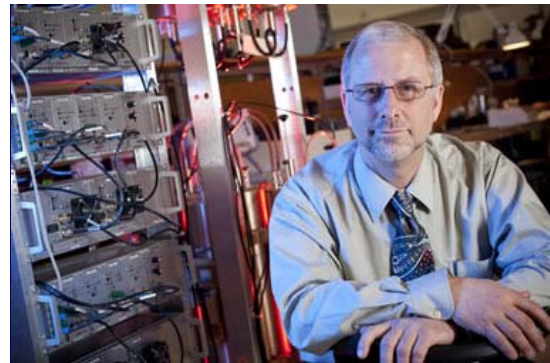
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President's Desk

As you can see from the above articles, a lot is happening at Daniels. Our new P25 voted and trunked products are generating a lot of interest both with our existing customers as well as new clients since we announced them at recent tradeshow. It is exciting to see how the company is expanding its capabilities to design, sell, manufacture and support these new systems.

Our recent contract win with the US Department of Homeland Security is very positive news and we expect that it will create a new channel to the related US Federal Agencies for our family of transportable repeaters in support of their security operations.

Lastly, we wish Dave Wegelin all the best in his retirement. Dave was a great contributor to the sales team and I know many of you enjoyed chatting with Dave as he helped you to find the optimal solution to your radio needs. I feel very confident that our new sales team members will uphold Dave's standard and ensure that with each phone call or email that Daniels is continuing to ensure that we satisfy you – our customers.



Robert Small, President & COO