



## FALL 2010 DANIELS ELECTRONICS NEWSLETTER

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### What's New

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#### And the award goes to.....Daniels Electronics – Technology Company of the Year

Daniels Electronics Ltd., was named Technology Company of the Year at the annual Victoria Advanced Technology (VIATeC) awards banquet held Thursday May 13th. The award for Technology Company of the Year recognizes a Greater Victoria company that has demonstrated excellence in innovation and a commitment to the technology community while embracing sound business fundamentals.



The Victoria Advanced Technology Council (VIATeC) is the conduit that connects people, knowledge and resources to grow a successful technology sector in Greater Victoria. Since VIATeC's inception back in 1989, the Greater Victoria technology sector has grown to over 800 technology companies, employing more than 13,000 people and generating in excess of \$1.95 billion in annual revenues making advanced technology Greater Victoria's #1 private industry.

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#### Compliance Assessment Program (CAP) and SDoCs

Daniels has recently posted test results and Supplier's Declaration of Compliance (SDoCs) documents to the US Department of Homeland Security Responder Knowledge Base <https://www.rkb.us/search.cfm?typeid=5>

The Publication of the SDoCs (Supplier's Declaration of Compliance) for Daniels MT-4E P25 radios encompasses base station, repeater and transportable repeater configurations for the UHF & 800 MHz band with VHF and 700 MHz bands to follow shortly. These declarations provide emergency response agencies with confirmation that the Daniels P25 infrastructure equipment has been tested in accordance with the Telecommunications Industry Association (TIA) P25 standards.

#### Three New Frequency Bands - 380 MHz, 430 MHz and 700 MHz

Daniels Electronics is now offering new versions of its MT-4E radios operating in the:

- 380 - 406 MHz Band



- 430 - 450 MHz Band
- 768 - 806 MHz Band (FCC Identifier – H4JUT – 4E850)

The MT-4E radio is a high performance, low current FM radio capable of P25 digital or analog operation in 12.5 kHz channels. P25 operation is supported via a purchasable P25 firmware option and secure mode operation is available via optional encryption modules. For full details visit the Daniels website: <http://www.danelec.com/products/rfmodules/>  
The MT-4E modules provide:



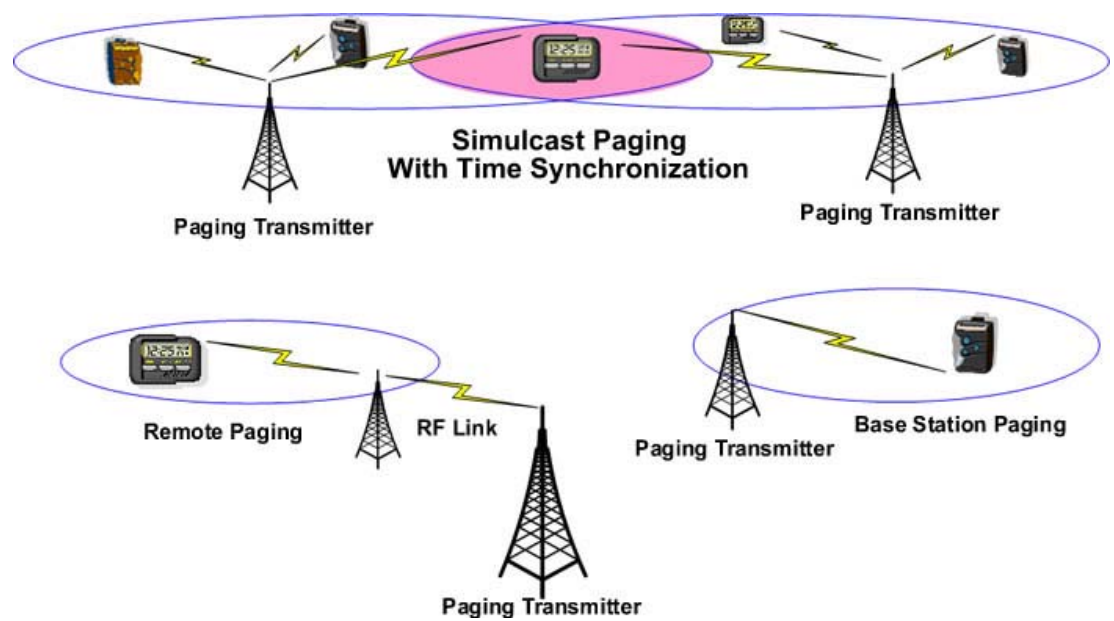
- Software programmable
- 8 Watt RF output (3 Watts @ 700 MHz)
- USB plug for programming and firmware upgrades
- Purchasable firmware upgrade from analog to P25 digital now or in the future
- Used for Repeater or Base Station applications
- Optional AES or DES compliant encryption modules

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## Featured Application - Paging

Daniels Electronics has for many years provided Paging Transmitters in a wide variety of configurations (Paging formats and output powers). Daniels continues to make 100% duty cycle paging transmitters for any paging application. For emergency response applications, paging can provide an effective alternate means to alert staff they are required in an instantaneous manner and also through the alpha numeric display provide basic instructions on what to do or where to meet. Three types of paging systems can be provided to best meet your requirements.

- **Base Station paging** - is the simplest configuration with the paging encoder connected to the Daniels radio for broadcast over the local coverage area. Optional high-power power amplifiers are available to extend the coverage area. A third party paging encoder generates the paging format for either analog (tone and voice) or digital display (numeric output). The Daniels radio then relays the radio signal to the handheld pager.
- **Simulcast Paging** - enables a message to be sent to all pagers in an overlapping coverage region simultaneously. High stability frequencies are required to time synchronize the multiple paging transmitters for simulcast.
- **A remotely operated paging transmitter** - can be connected back to the base paging transmitter through a Daniels RF repeater link for greater paging coverage. The paging encoder generates the desired analog or digital formats which are transmitted to a remote paging site through a radio link. Optionally the remote paging site can operate as a conventional voice repeater when not operating in paging mode.



Daniels radios support narrowband (12.5 kHz – NTIA compliant) and wideband (25 kHz) paging for base station, simulcast and remote paging applications. Optional high-power power amplifiers are available to extend the coverage area. A 3rd party paging encoder generates the paging format for analog (tone and voice) or digital display (numeric / alphanumeric output) pages. A variety of transmission standards are supported including:

- POCSAG at data transfer rates of 512, 1200, and 2400 Baud
- Motorola's FLEX™ 2 and 4-level modulation Paging Protocol at data transfer rates up to 6400 bps
- PURC controller signal

The Paging Modulator card interfaces the paging encoder to the Daniels radio module(s). It is designed for low power consumption, typically drawing less than 300 mA in steady state. It can also be configured for use as a data repeater whereby 2-level paging data is recovered, re-shaped and then re-transmitted to an additional repeater/paging transmitter. In its standard configuration, the Paging card uses an on-board 10 MHz high stability OCXO frequency reference source. For high stability applications such as Simulcast, the Paging Modulator may also be configured to use an external high stability reference source.



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## News and Events

### Upcoming Tradeshows

Daniels in conjunction with its regional sales representatives and authorized dealers will be participating at the upcoming industry events in 2010:

| Dates             | Logo  | Tradeshow                  | Location    | Web   |
|-------------------|---|----------------------------|-------------|---|
| Oct 29 -<br>Nov 4 |  | Emex                       | San Antonio | <a href="http://www.emex.org">http://www.emex.org</a>   |
| Nov<br>15 -18     |  | APCO Canada                | Vancouver   | <a href="http://www.apcocanadaconference.ca/">http://www.apcocanadaconference.ca/</a>                                     |
| Dec<br>5 - 8      |  | CITIG<br>National<br>Forum | Victoria    | <a href="http://www.cacp.ca/index/eventscontent?contentId=851/">http://www.cacp.ca/index/eventscontent?contentId=851/</a> |

### Douglas Bigrigg returns to Daniels to oversee Strategic Accounts

Douglas Bigrigg ([douglas\\_bigrigg@danelec.com](mailto:douglas_bigrigg@danelec.com)) has returned to Daniels Electronics Sales Department to assume responsibility for Daniels Strategic Federal Government Accounts in Canada and the USA. Doug has held a variety of positions within Daniels since 1990 ranging from RF designer through to sales and marketing management. Most recently he was Daniels Sales Representative for Canada. Welcome back Doug.



### Factory Training with our Indonesian System Integrator



Last month, Daniels Electronics' Indonesian System Integrator PT. Transavia Utama attended factory training in conjunction with the upcoming deployment of a radio repeater network for the National Search and Rescue Ministry BASRANAS.

Staff from PT. Transavia Utama were in Victoria conducting product training prior to installing the network of VHF repeaters across Indonesia. These radios will be used in the modernization, upgrading and expansion of BASRANAS' radio network, in support of day to day operations across the country.

### Daniels Electronics equipment is now available on the Texas DIR contract

Daniels Electronics has recently had all of its equipment added to the Texas DIR contract – Emergency Preparedness Hardware and Related Services - DIR-SDD-

TMP-119. Customers include any Texas state agency, unit of local government, institution of higher education, state agencies purchasing from a DIR contract through an Interagency Agreement, state agencies and political subdivisions of other states. Information regarding the Contracting and Procurement Services Division and the Go DIRect Program is located on DIR's Web site at <http://www.dir.state.tx.us/busops/index.htm>

## **Daniels Electronics receives new \$1 Million contract from Canadian Utility**

In July Daniels Electronics Ltd., received another contract award worth \$1.0 Million with a Canadian Utility for the supply of LMR repeaters using its latest generation of firmware based digital radio technology. These orders for Daniels MT-4E Radio Repeaters, will be used by the Utility to replace older radio systems in the modernization, upgrading and expansion of the utility's radio network across the province.

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## **Upcoming Technical Training Courses**

The Daniels training department has the following training courses planned:

### **Radio System Basics and RF Fundamentals Course**

October 19th, 2010  
Rio All Suite Hotel  
3700 W. Flamingo Road  
Las Vegas, NV 89103

November 2nd, 2010  
Four Points by Sheraton Vancouver Airport  
8368 Alexandra Road  
Richmond, BC Canada V6X 4A6

### **MT-4E Analog and P25 Digital Radio Systems Course**

October 5th and 6th, 2010  
Residence Inn Arundel Mills BWI Airport  
7035 Arundel Mills Circle  
Hanover, MD 21076

October 20th and 21st, 2010  
Rio All Suite Hotel  
3700 W. Flamingo Road  
Las Vegas, NV 89103

November 3rd and 4th, 2010  
Four Points by Sheraton Vancouver Airport  
8368 Alexandra Road  
Richmond, BC Canada V6X 4A6

### **MT-4E Analog and P25 Digital Radio Systems Course**

The course will consist of:

- Introduction to P25 Radio System Technology.
- Discussion of Interface Standards.
- Practical uses of P25 and definitions of P25 terms.
- Overview of the new P25 Conventional Fixed Station Interface Standard.
- Introduction to the New MT-4E Product Line (analog and P25 digital versions).
- Theory of Operation for all Daniels MT-4 radio systems.
- Demonstrations and tuning using Daniels MT-4E digital radio product line.

Any and all students are welcome to attend (Federal, Provincial or Local government employees, Dealers, or any others interested in Daniels radio products). Students can enroll in the 2-day class for \$825.00 (per student) plus applicable taxes. Course Enrollment also includes a set of Daniels Instruction manuals, Training Guide, training tool kit and some other goodies. Feel free to bring your laptop computer to have the RSS software loaded into it.

Customers may also bring their own Communications Analyzer (IFR 2975 or other), Daniels Radio System and test equipment if it is convenient. It is not necessary, but could allow for more hands-on with your own equipment. Please contact Daniels Training Section at [training@danelec.com](mailto: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.

### **On line Video based Product Training**

Daniels Electronics is constantly looking for new ways of supporting our customers. Recognizing that not everyone is able to attend our training classes, we are considering offering a series of online training videos as a viable alternative. The link below is to a 5 minute video (hosted on YouTube) we have developed which explains the tuning procedure for the MT-4E receiver RF preselector. <http://www.danelec.com/support/training/media/>

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## Training Video: MT-4E Receiver RF Preselector Preferred Tuning Method

This video will describe how to tune the MT-4E Receiver RF Preselector.

Tuning of the RF Preselector 5 cavity helical filter is typically only required when the Analog or Digital Sensitivity or Analog Distortion do not meet published specifications, or when the receiver RF frequency is changed beyond the band pass of the filter (typically 5 - 7 MHz in a VHF or UHF 400 MHz receiver). The UHF 700 MHz and 800 MHz receiver RF Preselector is Full Band, and does not require any tuning.

The RF Preselector may be tuned several different ways. The preferred method is to sweep the RF Preselector using a tracking generator and spectrum analyzer. The alternate method is to tune the RF Preselector for best SINAD response. The alternate method should only be used for single frequency receivers.



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## Technical Service Tips


### Newsletter Feedback

If you wish to unsubscribe from our newsletter, please email the [editor@danelec.com](mailto:editor@danelec.com).

Comments on desired enhancements or additions are welcome and can be forwarded to the [editor@danelec.com](mailto:editor@danelec.com).

The Technical Services Department at Daniels Electronics Ltd provides Service, Integration and Training. Our goal is to provide you with the support and information you need to do your job in the most efficient manner.

Daniels Manuals are very comprehensive, and include complete specifications, schematic diagrams, and jumper lists. The following Technical notes have been prepared to outline key aspects of tuning, installing, maintaining and servicing Daniels Radio Systems. The technical notes require Adobe Acrobat Reader for viewing.

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## Technical Notes

Daniels Manuals are very comprehensive, and include complete specifications, schematic diagrams, and jumper lists. The following Technical notes have been prepared to outline key aspects of tuning, installing, maintaining and servicing Daniels Radio Systems. The technical notes require Adobe Acrobat Reader for viewing.

To **download all** of the current Technical Notes right click and "Save Target As" (file size ~ 8 MB)


| Type                         | Code                  | Name   | Rev. # | Date   |
|------------------------------|-----------------------|--|--------|--------|
| <b>System Overview</b>       | <a href="#">Index</a> | Table of Contents                              | N/A    | Sep-08 |
|                              | <a href="#">TN105</a> | Dual Subrack Interconnection                   | 3-0-0  | Sep-08 |
|                              | <a href="#">TN110</a> | Channel and Frequency Selection                | 3-0-0  | Sep-08 |
|                              | <a href="#">TN130</a> | Audio Processor Tuning Procedures              | 6-0-0  | Sep-08 |
|                              | <a href="#">TN160</a> | Base Station or Link Configuration Settings    | 3-0-0  | Sep-08 |
|                              | <a href="#">TN170</a> | USB Driver Installation for MT-4E RSS          | 5-0-0  | Apr-10 |
|                              | <a href="#">TN175</a> | MT-4E Firmware Upgrading                       | 2-0-0  | Sep-08 |
| <b>Receiver Modules</b>      | <a href="#">TN213</a> | VR-3A130-SYF VHF AM Enhanced Receiver          | 5-0-0  | Apr-10 |
|                              | <a href="#">TN220</a> | VR-3H040 VHF Lowband Receiver                  | 5-0-0  | Sep-08 |
|                              | <a href="#">TN247</a> | VR-4E VHF MT-4E Receiver                       | 3-0-0  | Sep-08 |
|                              | <a href="#">TN267</a> | UR-4E UHF MT-4E Receiver                       | 4-0-0  | Oct-09 |
|                              | <a href="#">TN287</a> | UR-4E UHF 800 MHz MT-4E Receiver               | 3-0-0  | Oct-09 |
| <b>Transmitter Modules</b>   | <a href="#">TN311</a> | VT-3A130-SYF VHF AM Synthesized Transmitter    | 4-0-0  | Apr-10 |
|                              | <a href="#">TN320</a> | VT-3H040 VHF Lowband Transmitter               | 5-0-0  | Sep-08 |
|                              | <a href="#">TN347</a> | VT-4E VHF MT-4E Transmitter                    | 3-0-0  | Sep-08 |
|                              | <a href="#">TN367</a> | UT-4E UHF MT-4E Transmitter                    | 3-0-0  | Sep-08 |
|                              | <a href="#">TN387</a> | UT-4E UHF 800 MHz MT-4E Transmitter            | 3-0-0  | Apr-10 |
| <b>Power Amplifiers</b>      | <a href="#">TN425</a> | AMP-P10-2Ax1-C1 VHF Lowband Power Amplifier    | 3-0-0  | Sep-08 |
|                              | <a href="#">TN440</a> | AMP-2/150 VHF 30 Watt Power Amplifier          | 5-0-0  | Sep-08 |
|                              | <a href="#">TN445</a> | AMP-1xx-110-D1x VHF 60 - 110 W Power Amplifier | 3-0-0  | Sep-08 |
|                              | <a href="#">TN460</a> | AMP-2/450 UHF 30 Watt Power Amplifier          | 4-0-0  | Oct-09 |
| <b>Subracks</b>              | <a href="#">TN500</a> | SR-39-1 Subrack                                | 2-0-0  | Sep-08 |
|                              | <a href="#">TN520</a> | SR-39-3 Multiple Receiver Subrack              | 3-0-0  | Sep-08 |
|                              | <a href="#">TN530</a> | SR-39-4 Multiple Transmitter Subrack           | 4-0-0  | Sep-08 |
| <b>Controllers</b>           | <a href="#">TN600</a> | AC-3E Audio Control Card                       | 5-0-0  | Sep-08 |
|                              | <a href="#">TN640</a> | CI-PM-3 Paging Modulator                       | 2-0-0  | Sep-08 |
|                              | <a href="#">TN650</a> | CI-RC-4L Repeater Control Card                 | 5-0-0  | Sep-08 |
|                              | <a href="#">TN651</a> | CI-RC-4M Multiple Link Controller              | 5-0-0  | Nov-09 |
|                              | <a href="#">TN655</a> | CI-BC-4E Base Control Card                     | 3-0-0  | Sep-08 |
| <b>Transportable Systems</b> | <a href="#">TN710</a> | ET-3 Transportable Radio System Case           | 7-0-0  | May-10 |
|                              | <a href="#">TN720</a> | ET-4 Transportable Radio System Case           | 3-0-0  | May-10 |
|                              | <a href="#">TN730</a> | ET-5 Transportable Tactical Radio System Case  | 1-0-0  | May-10 |
|                              | <a href="#">TN735</a> | ET-6 Transportable Tactical Radio System Case  | 1-0-0  | May-10 |
|                              | <a href="#">TN750</a> | ET-1 Transportable Radio System Case           | 4-0-0  | Sep-08 |
|                              | <a href="#">TN790</a> | Transportable Radio System Accessories         | 3-0-0  | May-10 |
| <b>Other</b>                 | <a href="#">TN800</a> | A-PNL-AUX96-3 Auxiliary Connector              | 2-0-0  | Sep-08 |
|                              | <a href="#">TN811</a> | SM-3 System Regulator                          | 2-0-0  | May-10 |
|                              | <a href="#">TN820</a> | CP-SC-3 Synthesizer Channel Programmer         | 3-0-0  | Sep-08 |
|                              | <a href="#">TN830</a> | AC to DC and DC to DC Power Supplies           | 5-0-0  | Feb-09 |
|                              | <a href="#">TN835</a> | High Current AC to DC Power Supplies           | 1-0-0  | Sep-08 |
|                              | <a href="#">TN840</a> | Extender Cards and Kits                        | 4-0-0  | Sep-08 |
|                              | <a href="#">TN855</a> | CI-DSP-223 Vega DSP Tone-Remote Adapter        | 8-0-0  | Sep-08 |
|                              | <a href="#">TN856</a> | CI-IP-223 Vega IP Network Remote Adapter       | 4-0-0  | Sep-08 |
|                              | <a href="#">TN870</a> | CI-RSWITCH Redundant Switch                    | 2-0-0  | Sep-08 |
| <b>Test Procedures</b>       | <a href="#">TN900</a> | Daniels MT-3 and IFR 1200 Test Procedures      | 4-0-0  | May-10 |
|                              | <a href="#">TN910</a> | Daniels MT-3 and IFR COM-120 Test Procedures   | 3-0-0  | May-10 |

## Software Downloads on our website

Daniels has updated its website to provide the latest software downloads for its Radio Service Software (RSS) as well as firmware upgrades for the MT-4E radios. Available downloads and further information is available on our website.

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



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| <input checked="" type="checkbox"/> Trunked Systems  |  |  |                |               |                                |
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| <input type="checkbox"/> Software  |  |  |                |               |                                |
| <input checked="" type="checkbox"/> Software Downloads   |  |  |                |               |                                |
| Product Family   | Application<br>(click link for details)                        | Description  | Latest Version | Released Date | Application Downloads          |
| Drivers  | <a href="#">Daniels USB Driver Install</a>                     | Daniels USB Driver Install.  | 1.0.0.0        | 18-Mar-2008   | <a href="#">Downloads Page</a> |
| CI-RC-4M   | <a href="#">Multiple Link Controller Software</a>              | This application is used to configure the setup of the Receiver / Transmitter links on the CI-RC-4M.   | 1.2.1.0        | 10-Dec-2009   | <a href="#">Downloads Page</a> |
| MT-4E Radios   | <a href="#">Radio Service Software 4E Radios (RSS4E)</a>       | This application is used to configure, service, and test Daniels MT-4E digital transmitters and receivers.   | 1.5.7          | 26-Jul-2010   | <a href="#">Downloads Page</a> |
| MT-4E Radios   | <a href="#">Firmware Flashing Software</a>                     | This application is used to update the firmware in Daniels flashable products.   | 1.5.1.0        | 29-Oct-2009   | <a href="#">Downloads Page</a> |
| MT-4E - Firmware   | <a href="#">MT-4E - Receiver - Firmware</a>                    | MT-4E - Receiver - Firmware  | 2.2.9          | 29-Jan-2010   | <a href="#">Downloads Page</a> |
| MT-4E - Firmware   | <a href="#">MT-4E - Transmitter - Firmware</a>                 | MT-4E - Transmitter - Firmware   | 2.2.7          | 27-Oct-2009   | <a href="#">Downloads Page</a> |
| UIC  | <a href="#">Universal Interface Card Configuration Utility</a> | This application is used to read and to modify various configuration settings in the Universal Interface Card (UIC).                                     | 1.3.0.0        | 14-Jun-2010   | <a href="#">Downloads Page</a> |
| Templates  | <a href="#">Daniels Visio Stencil</a>                          | This stencil is for use with Microsoft Visio 2003. Most modules in the template are drawn to scale. This stencil is provided as is and without warranty. | 1.0            | 23-Jul-2007   | <a href="#">Downloads Page</a> |

## Daniels Technical Service now on Skype

To provide better service to you our customer, Daniels Electronics has now set up a Skype account for our service department. With Skype (Daniels Electronics Ltd – Service: Service\_DE) Daniels can now utilize the video call capabilities to help troubleshoot your system. To arrange a Skype call contact Don Brown at 250 382 8268 or email [service@danelec.com](mailto:service@danelec.com)



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## President's Desk

Our newsletter is a great snapshot of the progress the company is making. Each quarter I am very proud of the accomplishments of the Daniels team and again this newsletter is no exception.

Daniels continues to win business globally as indicated (Canada, Texas, Indonesia) and the recent recognition by our local high tech peers with the local Technology Company of the Year award was a great honour for all the Daniels team.

Product developments continue to be released and I am especially pleased that our products have achieved another level of independent certification with the DHS

Compliance Assessment Program (CAP) Suppliers Declarations of Compliance (SDoCs). These certifications ensure our products meet the latest industry standards to fulfill your needs. We are also seeing a resurgence of an older technology – paging and are happy to have current production on a time proven product that can meet your needs for many more years to come.

Lastly the innovation of our team with e-media tools such as online training videos and Skype services are another way in which we are ensuring we satisfy your requirements.

Regards,



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Robert Small, President & COO

