#### PN 91-529-B Serial-to-Ethernet Device Server Kit (c/w P/S & cable) Installation and Configuration Guide

There are two common scenarios for connecting the Serial Device Servers to Computrol C6000 and Fleet cardlock systems. Each topology requires specific configuration settings in order to maximum communications reliability.

#### Scenario 1:

# In this simple scenario, Ethernet cable is run out to the cardlock terminal and fitted with an RJ45 connector that can be plugged into the Serial Device Server. The Device server is then connected to the serial port on the cardlock Main board with a standard 9-pin NULL modem cable (Computrol PN 91-551 or equivalent).

The Serial Device Server is programmed with the appropriate IP address and IP port settings. The COM port is configured for the same baud rate, data bits, and parity (typically 9600,8,N,1) that the cardlock uses. Flow Control on both the cardlock and the Serial Device Server should be set to NONE.

The Packet Delimiter on the Serial Device Server should be set to a Timer delimiter of 0 (zero) milliseconds as opposed to using a Character delimiter. If this setting is not done correctly, missing characters are likely to be noticed in the serial communications stream.

#### Scenario 2:

In this scenario, A pair of serial point-to-point radio modems are used instead of running Ethernet cable out to the cardlock. The serial Device Server is connected to the network via Ethernet cable and the device is connected to the radio modem via a standard 9-pin NULL modem cable, usually supplied with the radio modem. A paired radio modem is installed at the cardlock and connected to the Main board's serial connector, again with the supplied NULL modem cable.

As before, the Serial Device Server is programmed with the appropriate IP address and IP port settings. The COM port is configured for the same baud rate, data bits, and parity (typically 9600,8,N,1) that the cardlock uses. However, in this case, Flow Control on Serial Device Server should be set to HARDWARE.

The radio modem that is connected to the Serial Device Server must be configured with a checkmark next to RTS Enable selection. This ensures that the radio modem uses hardware flow control when communicating with the Serial Device Server.

The radio modem that is connected to the cardlock terminal should NOT have a checkmark next to the RTS Enable selection. The cardlock system.ini should ensure that flow control for the serial port is set to the equivalent of "none".

### Configuration:

SE5001 series Serial Device Servers supplied by Computrol are fully tested by Computrol technicians prior to shipping. During this process, certain configuration settings are changed from the original manufacturer's default settings. This is done in part to ensure best reliability and also in order to simplify installation. Computrol configures the devices for DHCP Ethernet connectivity. The end-user will want to assign a static IP address and make other configuration changes so as to conform to their network standards. Installers are



advised to review the installation parameters ahead of time with the end-user or their authorized I.T. provider to avoid network conflicts.

Each Serial Device Server kit comes with an OEM CD-ROM upon which may be found a program called "Serial Manager". Installing this program on a technician or I.T. personnel's computer is strongly recommended. Once the program is installed, start it, then choose Search  $\rightarrow$  Search by MAC Address (shortcut: CTRL-M) and select "Filter devices by range of MAC address" starting with 00:60:E9:00:00:00 and ending with 00:69:E9:FF:FF.

| Filter Devi           | ces by MAC Addresses                | ×  |
|-----------------------|-------------------------------------|----|
| ⊢ <sup>Select</sup> a | MAC address to be filtered          |    |
|                       | New                                 | 1  |
|                       |                                     |    |
|                       | Delete                              |    |
|                       |                                     |    |
|                       |                                     |    |
| Filter /              | devices in the range of MAC address |    |
| IV TILLET             | devices in the range of MAC address |    |
| - MAC ac              | loress range                        |    |
| From:                 | 00:00:29:00:00:00                   |    |
| To:                   | 00 : 60 : E9 : 🚮 : FF : FF          |    |
|                       |                                     |    |
|                       | <u>O</u> K <u>C</u> ance            | el |
|                       |                                     |    |

Press OK when done.

Now connect the SE5001 device to the local area network and plug in the power supply. Once the LAN indicator lamp shows a regular pattern of flashing, press the Search button in Serial Manager. Within a few seconds the device should be found and the IP address should be displayed:

| Serial Manager V4        | .8.1                                 |              |   |                      | - 🗆 X               |                |
|--------------------------|--------------------------------------|--------------|---|----------------------|---------------------|----------------|
| Search Configuration     | n Security Advance Virtual COM About |              |   |                      |                     | -              |
|                          | n Model                              |              | MAC Address                             | Hact Name            | Kernel              |                |
| No. Cautr<br>1 @         | n   Model<br>SE5001                  | 192.168.2.42 | <b>MAC Address</b><br>00:60:E9:21:25:BE | leto ti Name<br>name | Kernel A<br>V2.70 T | <u>Ψ</u><br>Γe |
|                          |                                      |              |   |                      |                     |                |
| < Ready, Total 1 devices |                                      |              |   |                      | NUM                 | >              |

If the device is not found, the network may not be configured to allow new devices to use DHCP. Contact the network administrator to correct this.

Once the IP address is identified, you can use a web-browser to connect to it and reconfigure it to suit the network administrator's requirements. Simply type the IP address into the Address Bar of the browser and then log in using the default username "admin" and password "default" (without the quotes).

Once logged in, you will see the main setup screen:

| Web Configuration Utility | × +  |   | EN English (Canada) 🛛 🗯 US 📮  |         |       |          | <u>8</u> × |
|---------------------------|--|---|---|---------|-------|----------|------------|
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| E Simcom.tech             | com. tech-81 🧿 Simcom-Demo Terminal 🕋 Metronome Growth S |   |   |         |       |          |            |
|                           |  | Eth   | ernet-Serial Server   |         |       |          | -          |
| <u>Overview</u>           | Overview   |   |   |         |       |          |            |
| Networking                | The general de   | vice information of Ethe  | ernet-Serial Server.  |         |       |          |            |
| Security                  |  | Model Name  | SE5001  |         |       |          |            |
| сом1                      |  | IP Address  | 10.0.50.100   |         |       |          |            |
|                           |  | MAC Address   | 00:60:E9:21:25:BE   |         |       |          |            |
|                           |  | SysName   | name  |         |       |          |            |
|                           |  | SysLocation   | location  |         |       |          |            |
|                           |  | SysContact  | contact   |         |       |          |            |
|                           |  | Kernel Version  | V2.70   |         |       |          |            |
|                           |  | AP Version  | TerminalSrv v3.609MU  |         |       |          |            |
|                           |  | Link Status   | S   |         |       |          |            |
|                           | The Status C   | Note:<br>About Link Status field<br>"S" for TCP Server ma<br>"A" for TCP Server and<br>"C" for TCP Scient mo<br>"B" for TCP Client mo<br>"U" for UDP mode | t:<br>de and Listening<br>1 Connected<br>de and NDT Connected<br>de and Connected<br>de and Connected<br>connection |         |       |          | _          |
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Click on "Networking" and change the settings as directed by the end-user or network administrator.

|                                     | * \ <u></u>  |  |  |                                    |                               |          |           |              |               |                   | 0           |            |    |  |
|-------------------------------------|--|--|--|------------------------------------|-------------------------------|----------|-----------|--------------|---------------|-------------------|-------------|------------|----|--|
| → G ⊕ Witch secure   192,168,25     | 42   |  |  |                                    |                               |          |           |              |               |                   |             |            | \$ |  |
| Apps 💪 Google 👖 Tribal Calendar 🧰 M | fetronome Growth 1 📲 Vancouver Sun   Late : 📭 The Province   Lates : 🔶 CBC N   | iews - Latest Cr - 🔤 Teks Webma  | il 🔾 HughesRl  | F 🔿 Port                           | Moody RTT 🔘                   | Cola RTT | i sincomb | ch 📙 Xyfon S | andoox 🧿 Goog | le 📙 In-house Sim | com [ in-ho | use Sandbo | ж  |  |
|                                     |  | Ethe   | net-Seri   | al Sen                             | ver                           |          |           |              |               |                   |             |            |    |  |
|                                     | TCP/IP   |  |  |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | To configure network settings of Ethern  | net-Serial Server. After sav   | ing  |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | configuration you have to restart the de   | evice to make the settings   | enective.  |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     |  | DHCP   | <ul> <li>Obtain a</li> </ul>   | n IP auto                          | matically                     |          |           |              |               |                   |             |            |    |  |
|                                     |  | ID Address   | 403  |                                    | 10                            | -        |           |              |               |                   |             |            |    |  |
|                                     |  | Subnet Mask  | 266 266  | 266                                | . 42                          | -        |           |              |               |                   |             |            |    |  |
|                                     |  | Default Gateway  | 192 168  | 2                                  | 1                             | -        |           |              |               |                   |             |            |    |  |
|                                     |  | Preferred DNS  | 192 168  | 2                                  | 1                             |          |           |              |               |                   |             |            |    |  |
|                                     |  | Alternate DNS  | 0 0  | . 0                                | 0                             | 1        |           |              |               |                   |             |            |    |  |
|                                     |  | Third DNS  | 0 0  | 0                                  | 0                             | -        |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By enabling SNMP you allow the mani<br>information of Ethernet-Serial Server 1   | agement utility to collect th  | e  |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By enabling SNMP you allow the manu<br>information of Elbernet-Senial Server."<br>network identity as well by changing th<br>contact.              | agement utility to collect th<br>You can change the device<br>re system name, location a   | e<br>nd  |                                    |                               | _        |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By enabling SNMP you allow the man<br>information of Bhernet-Senial Server<br>network identify as well by changing th<br>contact.                  | agement utility to collect th<br>You can change the device<br>te system name, location a<br>SNMP   | e<br>nd<br>💌 Enable  |                                    |                               | _        |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By reaking SNMP you allow the man<br>information of Ethernet-Senial Serier i<br>network deathy as well by charging th<br>contact.                  | agement utility to collect th<br>You can change the device<br>the system name, location a<br>SNMP<br>SysName   | e<br>nd<br>💉 Enable<br>name  |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By enabling SNMP you allow the man-<br>information of Enternet-Senial Server<br>network identity as well by changing th<br>contact.                | agement utility to collect th<br>You can change the device<br>to system name, location a<br>SNMP<br>SysName<br>SysLocation   | e<br>M Enable<br>name<br>location  |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By enabling 3540° you alow the man-<br>ing and the second second second second second second second you will by charging th<br>cented.             | agement utility to collect th<br>You can change the device<br>to system name, location a<br>SNMP<br>SysName<br>SysLocation<br>SysContact   | e<br>nd<br>rame<br>location<br>contact   |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By entiting SNMP you allow the man<br>information of Beneral-Seriel Serier<br>network dentity as well by changing th<br>context.                   | agement utility to collect th<br>You can change the device<br>system name, location a<br>SNMP<br>SysName<br>SysLocation<br>SysContact<br>Read Community  | e<br>nd<br>name<br>location<br>contact<br>public   |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By enabling 3580 year allow the main<br>benefits of Ethernet Sona Grower<br>memory dentity as well by changing th<br>contact.                      | agement utility to collect th<br>You can change the device<br>ne system name, location a<br>System name, location<br>SysLocation<br>SysLocation<br>SysLocation<br>Read Community<br>Write Community  | e nd  Conton  Conton |                                    |                               |          |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>By existing SNMP you allow the nam<br>information of Brennet-Seriel Server<br>normal dentity as well by changing th<br>context.                    | agement utility to collect th<br>You can change the device<br>the system name. Iocation a<br>SysName<br>SysLocation<br>SysContact<br>Read Community<br>Write Community<br>Trap Server IP   | e<br>nd<br>rame<br>location<br>contact<br>public<br>private<br>0 0   |                                    | 0                             |          |           |              |               |                   |             |            |    |  |
|                                     | SNMP<br>Dry enations 3540 <sup>4</sup> you allow the man<br>indexed source of the state of the source<br>endexed doubly as well by changing it<br>context. | apsment utility to collect ID to collect ID to concern change the device to system name, location as system name, location as systematic to the systematic term of ter | e<br>nd<br>v Enable<br>name<br>location<br>contact<br>public<br>private<br>0 0 0<br>Cold/We<br>Link Up<br>Link Up<br>Link Up   | m Start<br>mn TCP Con<br>cation F1 | 0<br>Connection)<br>anection) |          |           |              |               |                   |             |            |    |  |

Once all desired networking changes have been made, click on the "Save Configuration" button.

For Scenario 1, (direct between Ethernet and Serial), you will generally only need to change the networking settings as described above and ProFuel 2 settings as described further in this document.

For Scenario 2, (using the device in conjunction with Laird radio modems) the networking configuration (described above) is the same, as are the ProFuel 2 settings, but you must make an additional changes to Flow Control between the Serial Device Server and the attached radio modem:

For the Serial Device Server, click on "Com1" in the left-side panel. When the new Com1 settings are shown, scroll down to Flow Control and select RTS/CTS.

| / C1 Web Configuration          | Utify x Google x   |   |   | θ  | - 0     | ×          |
|---------------------------------|--|---|---|--|---------|------------|
| $\epsilon \rightarrow C \cap C$ | Not secure   192.168.2.42  |   |   |  |         | <b>☆</b> : |
| 🔢 Apps 🔓 Google                 | 👖 Tribal Calendar 👩 Metronome Growth : 📓 Vancouver Sun   Late: 💽 The Province   Latest | 🔶 CBC News - Latest Cr - 🌌 Telus Webmail - 🧕  | HughesRTT 🗿 Port Moody RTT 🧿 DiCola RTT 📔 sin   | comitech 🔢 Xyfon Sendbox 🔓 Google 🔝 In-house Simcom 🞼 In-house : | Sandbox |            |
|                                 |  | IP Filter   | Enable, Source IP :<br>0.0.0.0  |  |         | •          |
|                                 |  | Idle Time Before Sending TCP Alive<br>Packet  | 4 *10 +10sec (0~255, 0.Disable)   |  |         |            |
|                                 |  | TCP Inactivity Time Before<br>Disconnect  | o sec (0~255, 0.Disable)  |  |         |            |
|                                 |  | After Serial Inactivity Time is Expired<br>Discard Serial Data Before Next<br>Connection (Silence Time) | u min (0~255, 0 Disable)  |  |         |            |
|                                 |  | Multiple_Connections  | Enable (Max 4 connections)  |  |         |            |
|                                 | COM1<br>To configure COM port parameters.  |   |   |  |         |            |
|                                 |  | Serial Interface RS-232   |   |  |         |            |
|                                 |  | Alias Name  |   |  |         |            |
|                                 |  | Parity  | Odd Even Soace  |  |         |            |
|                                 |  | Data Bits 07 bits   | • 8 bits  |  |         |            |
|                                 |  | Stop Bits • 1 bit   | 2 bits  |  |         |            |
|                                 |  | Flow Control None   | RTS/CTS DTR/DSR / n/Xoff  |  |         |            |
|                                 |  | Emply Savid Duffer Minas  |   |  |         |            |
|                                 |  | TCP Connection is<br>Established  | No, (Default Yes)   |  |         |            |
|                                 |  | Sync DTR signal with<br>TCP connection YES  | • No, (Default: No)   |  |         |            |
|                                 |  | Sync RTS signal YES   | • No, (Deface Vo)   |  |         |            |
|                                 |  | Data Parket Delimiter   | character Time Gap :<br>msec (0~30000, 0.Drubbe)<br>acters :<br>("0x" + Hex Code, e g. word" or "0x0d0a") |  |         |            |
|                                 |  | COM Type Section • RS23   | 2 RS485 RS 2 RS485 4 Wires  |  |         |            |
|                                 |  |   | Sere  |  |         |            |

The Data Packet Delimiter is set by Computrol to use an "Inter-character Time Gap" of  $\underline{0}$  (zero) milliseconds. It is most important that this setting NOT be changed or communications reliability may be affected.

Once the above changes are made, click on the Save button at the bottom of the page.

You must also change the Options on the Laird Radio modem to use "RTS Enable". Do this ONLY for the Radio modem that will be connected to the SE5001; the radio modem at the cardlock terminal should NOT use "RTS Enable".

| Pit St Enable       Client         Modem Mode       Client/Server:         Pata Encryption       Aa Transmit Retries:         Show       Broadcast Attempts:         Defaults       Defaults         Broadcast Attempts:       1         RF Delivery: Addressed       Data Encryption Key:         Eimware Version: V 8.7-1       Data Encryption Key:         MAC Address: 00 50 67 E0 02 6D       Max Power:         PC Settings       ConnexLink         ConnexLink       ConnexNet         About       Load Elio   | Options   | Interface <u>B</u> aud Rat                | e:   9600 | D               |                  |
|--|---|---|-----------|-----------------|------------------|
| ■ Penty       Channel Number:       40       Rang         ■ Data Encryption       Max Transmit Retries:       16       Rang         Broadcast Attempts:       4       Rang         Show       Broadcast Attempts:       4       Rang         Show       Defaults       0       50       67       C1         RF Delivery: Addressed       Destination Address(hex):       00       50       67       C1         RF Delivery: Addresse       00 50 67 E0 02 6D       Max Power:       Medium Power (Approx         PC Settings <ul> <li>ConnexLink</li> <li>ConnexNet</li> <li>Boot</li> <li>Show</li> <li>Destrial Comm. Port (COM5)</li> <li>ConnexLink</li> <li>C</li></ul>   | Modem Made  | <u>C</u> lient/Serve                      | er: Clier | nt              |                  |
| Petiti Duplex       Image: Constraint of the second s   | E Fanty   | Channel <u>N</u> umbe                     | er: 40    | R               | ange: 16         |
| Broadcast Attempts:     4     Rang       Show     System Identification:     1     Rang       Defaults     Destination Address(hex):     00     50     67     C1       RF Delivery: Addressed     Data Encryption Key:     13     23     45     61     77       MAC Address:     00     50     67     C1     Max Power:     Medium Power (Approx   | Data Encryption                                     | Max Transmit Retrie                       | s: 16     | R               | ange: 0 -        |
| Show       System Identification:       1       Rang         Defaults       Dgstination Address(hex):       00       50       67       C1         RF Delivery: Addressed       Data Encryption Key:       13       29       45       61       77         MAC Address: 00 50 67 E0 02 6D       Max Power:       Medium Power (Approx         PC Settings       © ConnexLink       © ConnexNet         Port:       USB-to-Serial Comm. Port (COM5)       Image: Addressing Context File       About  |   | Broadcast <u>A</u> ttempt                 | s: 4      | R               | ange: 0 -        |
| Defaults       Dgstination Address(hex):       00       50       67       C1         RF Delivery: Addressed       Data Encryption Key:       13       23       45       61       77         MAC Address: 00 50 67 E0 02 6D       Max Power:       Medium Power (Approx         PC Settings           ConnexLink           ConnexNet          Port:       USB-to-Serial Comm. Port (COM5)            Data Encryption Key:           About           About   | Show  | System Identificatio                      | n: 1      | R               | ange: 0 -        |
| PF Delivery: Addressed     Data Encryption Key:     13     29     45     61     77       MAC Address: 00 50 67 E0 02 6D     Max Power:     Medium Power (Approx  | Defaults  | Destination Address(he)                   | d): 00    | 50 67 C         | 1 0E             |
| PC Settings PC Set | RF Delivery: Addressed                              | Data Encryption Ke                        | y: 13     | 29 45 61        | 77 93            |
| PC Settings  | MAC Address: 00 50 67 E0 0.                         | 12.6D Max <u>P</u> owe                    | ar: Med   | lium Power (App | prox 200n        |
| Port: USB-to-Serial Comm. Port (COM5)  |   |   |           |                 |                  |
| p up y 9600  | PC Settings   | KLink C ConnexNet                         |           | Abaut           |                  |
| Baud Nate: 19999   | PC Settings<br>Connex<br><u>P</u> ort: USB-to-Seria | kLink C ConnexNet<br>al Comm. Port (COM5) |           | <u>A</u> bout   | <u><u>H</u>e</u> |

### ProFuel 2 Configuration:

Observe the following PCU settings on the Communications Tab:

| e Save Add Delete No. Controller ID PCU_1   | Export First Previous Next Location Hope Works Yard   | Last   |
|---|---|--|
| System (1)<br>Transaction Format (7)<br>Error Messages (4)  | Display Prompts (2)<br>Receipt Format (8)<br>Pumps/Printers/UI (5)  | Custom Settings (3)<br>Automation (9)<br>Communication Setup (6)   |
| C COM Fort TCP/IP<br>Communication Port<br>Physical Connection 3wire<br>COM Port 4<br>Baud Rate 1200<br>Parity None 	Flow<br>Modem<br>Number<br>Init. String ATZ<br>Automatic Data Switch<br>Arming Code 0<br>Login | Stop Bits 1 C Ethern<br>V Control None Control None Control IP Address<br>IP Net Mail IP Roada<br>IP Server | ard Xmodem (default to 1K-Xmodem)  defess 192.168.2.25  Poort 4660  Settings  None  4660  Ss:  cast:  r:  r: |
| User Italk<br>Password Internet   |   | onsole Idle Timeout (Minutes) 5  |

Note that the "Host Address" is the IP address of the SE5001 Serial Device Server.

Note that "TCP Port" must be set to match the configuration on the SE5001 Serial Device Server.

Be sure to check the "Ethernet to Serial connection" checkbox.

Click the "Save" button before attempting to test the communications.