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**Abstract:**

This document describes configuring the Crimson® Mail Manager to send email and Short Message Service (SMS) messages, as well as to receive SMS messages. All of the mail server settings mentioned are real world servers, user names, and passwords that may be used by Red Lion Controls (RLC) customers for testing purposes.

**Products:**

Email via a Secure Connection (SSL/TSL or STARTTLS): CR3000 Human Machine Interface (HMI), Graphite® Controller, and Graphite HMIs

Email via an Unsecure Connection: CR3000 HMI, Data Station Plus (DSP) (except LE model), G3 HMI, Graphite Controller, Graphite HMIs, Modular Controller (except LE and V2 models), Product-Vity Station™ (PTV)

SMS Send/Receive: CR3000 HMI (with CRM000 CM CMOD0 000 module or external serial cellular modem), DSP (except LE model, with XCHSPA00 expansion card or external serial cellular modem), G3 HMI (with G3HSPA00 expansion card or external serial cellular modem), Graphite Controller (with GMHSPA00 module or external serial cellular modem), Graphite HMIs (with GMHSPA00 module or external serial cellular modem), Modular Controller (except LE and V2 models, with XCHSPA00 expansion card or external serial cellular modem), PTV (with XCHSPA00 expansion card or external serial cellular modem)

**Use Case: Sending Email & SMS**

This document describes using Crimson to configure Red Lion devices to send email or SMS messages, and to receive SMS messages.

**Required Software:**

Crimson 2.0, 3.0, or 3.1

**Required Operating System:**

Microsoft Windows 2000, or above

## Introduction

Crimson can be configured to send email messages when alarm conditions are present or when notifications need to be provided about other events within the system. These messages may be sent via SMS to cellular devices, or via Simple Mail Transport Protocol (SMTP) email to any device which accepts mail using standard Internet protocols.

**NOTE:** Crimson is **not** capable of receiving messages.

### Configure Network Connection

1. Referring to Figure 1, navigate to the Communications section.
2. Click *Network* in the Navigation Pane.
3. Click on the *Ethernet 1* or *Ethernet 2* tab, as applicable.
1. Select the appropriate selection for the **Port Mode**: parameter; *Manual Configuration* in this example.
  - a. Define the **IP Address**: parameter, as applicable.
  - b. Define the **Network Mask**: parameter, as applicable.
  - c. Define the **Gateway**: parameter, as applicable
2. Configure the **DNS Settings** parameters if a named mailed server will be used.

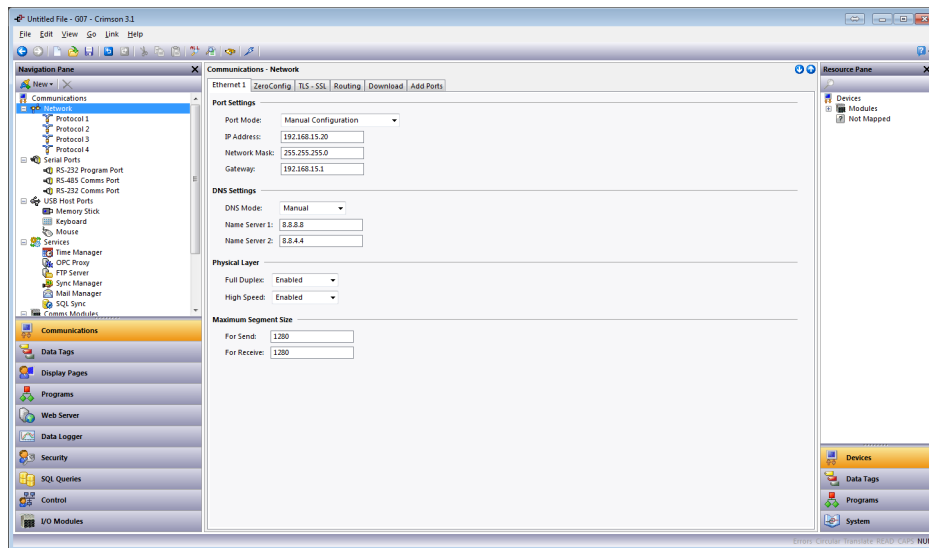


Figure 1.

3. Referring to Figure 2, enable TLS-SSL only if a secure connection is required, by performing the following:
  - a. Click on the *TLS – SSL* tab.
  - b. Set the Protocol Support parameter to *Enabled* under Settings.
  - c. Select the *Certificate Source* option.

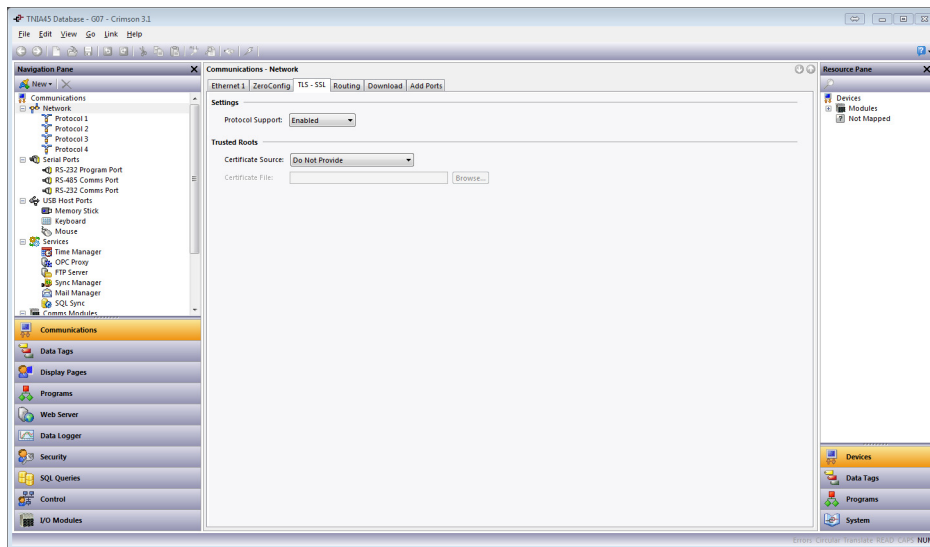


Figure 2.

**Note:** Providing a certificate is not required for a secure connection to be established. However, the default may or may not meet your application's security requirements. Consult with your Information Technology department for security requirements.

## Configure Mail Manager

Mail Manager is used to configure the mail transports and the email address book. The properties on the Mail tab are used to enable or disable the mail manager, and to provide a name for the device on which Crimson is running. This name will be used within email messages to identify the originator of the message. Applications typically use the name of the machine to which the device is attached or the name of the site that is being monitored.

1. Referring to Figure 3, click on *Mail Manager* in the Navigation Pane.
2. Set the *Enable Mail Manager*: option to *Yes*.
3. Define the *Unit Name*:; *Crimson Device* in this example.

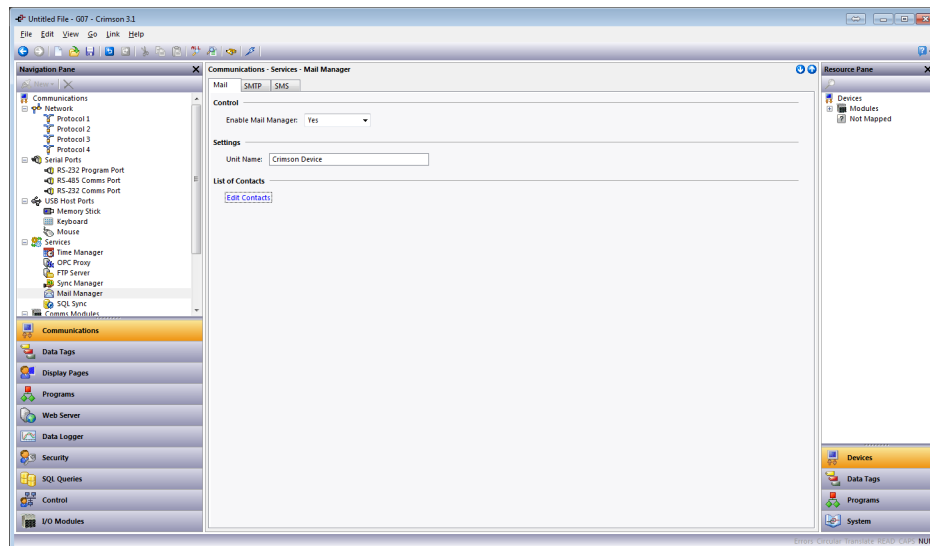


Figure 3.

4. Click the *Edit Contacts* button; the List of Contacts popup shown in Figure 4 appears.

- Referring to Figure 4, define the Names and Addresses of contacts to be added to Crimson's address book. Each entry allows a display Name and an Address to be entered, together with an optional expression that will enable or disable email to that contact. The address should be in a format suitable for the required transport. For example, SMTP names should follow the usual `name@domain` format. SMS names should be entered as international-format telephone numbers without the leading plus sign (i.e., SMS contacts must contain only numbers and must begin with the country code).

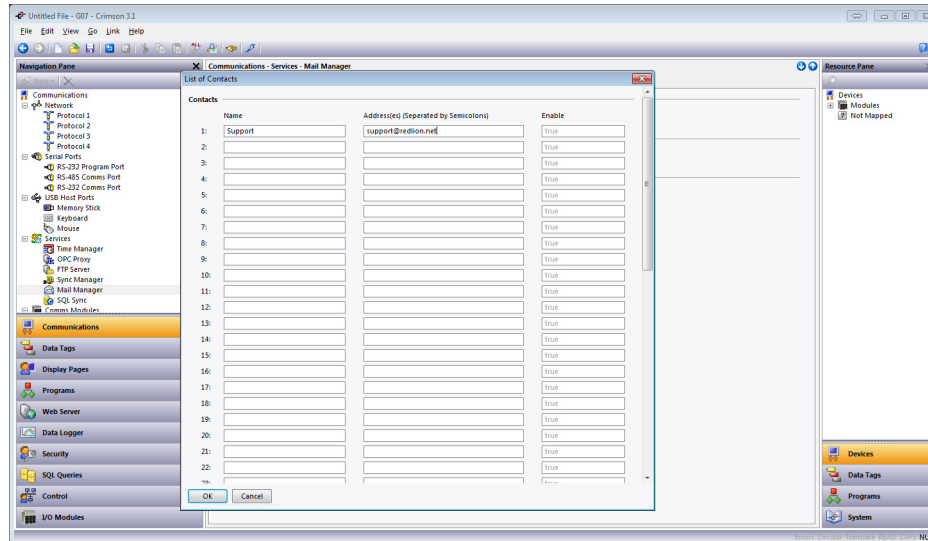


Figure 4.

- Click OK.

## Configure SMTP (Email)

The SMTP tab is used to configure the Simple Mail Transport Protocol. This is the standard protocol used to send email over the Internet or over other TCP/IP networks. SMTP addresses follow the familiar `name@domain` standard.

1. Referring to Figure 5, click on the *SMTP* tab.
2. Set the *Transport Mode*: parameter to *Enabled*.
3. Set the *Server Selection*: parameter, as applicable; *Manual Configuration* in this example.
4. Set the *Server IP Address*: mode from the drop down; *Fixed Name* in this example.
5. Set the IP address, server name, or use a tag as applicable; *mail.authsmtp.com* in this example.
6. Enter the *Server Port Number*; 25 in this example.
7. Enter the *Domain Name*: parameter, as applicable.
8. Click the *Edit* button next to the *Reverse Path*: parameter; the Edit the E-mail Address popup appears. This is the address where the email will come 'from'; in the case of AuthSMTP, this address must be registered with the server.

- a. Specify the *Display Name*: parameter; *Red Lion Test* in this example.

**NOTE:** When using an Office365 server, the Display Name must be contained in double quotes (e.g., "*Your Display Name*").

- b. Specify the *E-mail Address*: parameter; *g3auth@redlion.net* in this example.

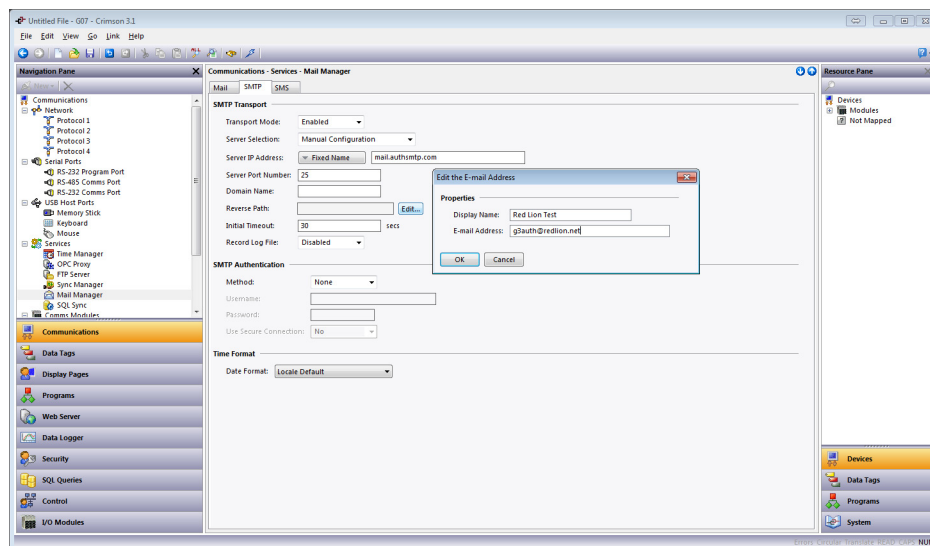


Figure 5.

9. Click *OK*.
10. Set the *Initial Timeout*: parameter, as applicable; the default is acceptable for most applications.
11. Set the *Record Log File*: parameter to *Disabled*. Note that this parameter should only be set to *Enabled* for troubleshooting purposes and will also require a properly formatted memory card to be inserted in the unit.

12. Referring to Figure 6, select the appropriate SMTP Authentication Method: *Digest* in this example.
13. Enter the Username: *parameter*, as applicable.
14. Enter the Password: *parameter*, as applicable.
15. Set the Use Secure Connection: *parameter* as applicable; *No* in this example.
16. Set the Date Format: *parameter*, as applicable; *Locale Default* in this example.

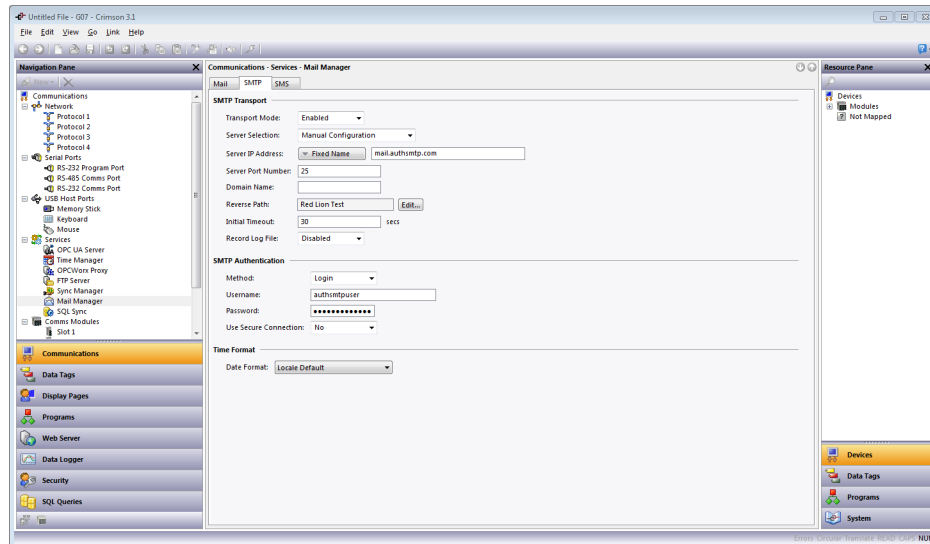


Figure 6.

## Common Email Provider Settings

This section lists settings typical of commonly used email providers.

### AuthSMTP Settings

- Server Address: mail.authsmtp.com
- Username: your AuthSMTP user name
- Password: your AuthSMTP password
- Port: 23, 25, 26, 325, or 2525

### Gmail SMTP Settings

- Server Address: smtp.gmail.com
- Username: Your full Gmail address (e.g. yourusername@gmail.com)
- Password: Your Gmail password
- Port (TLS): 587
- Port (SSL): 465
- TLS/SSL required: yes

### Yahoo SMTP Settings

- Server Address: smtp.mail.yahoo.com
- Username: Your full Yahoo address (e.g. yourusername@yahoo.com)
- Password: Your Yahoo password
- Port: 465 or 587
- Requires SSL: Yes
- Requires TLS: Yes (if available).

### Outlook.com SMTP Settings

- Server Address: smtp-mail.outlook.com
- Username: Your full Outlook.com address (e.g. yourusername@outlook.com)
- Password: Your Outlook.com password
- Port: 587
- Requires STARTTLS: Yes.



## Demo Accounts

This section lists the user names and passwords for demo accounts maintained by RLC and available to RLC users when establishing and testing their email settings.

### Gmail:

User: *Redliontest1@gmail.com*

Pass: *20willowsprings*

### Yahoo:

User: *redliontest@yahoo.com*

Pass: *20willowsprings*

### Outlook:

User: *redliontest@outlook.com*

Pass: *20willowsprings*



## Add and Configure Cellular Modem

This section describes how to add and configure a cellular modem. Instructions are included for both Serial Modems and for Modem Modules/Option Cards.

1. Referring to Figure 7, navigate to the Communications section.
2. Add a cellular modem: if adding/configuring a Serial Modem, go to Step a; if adding/configuring a Modem Module or Option Card, go to step b.
  - a. To add/configure a Serial Modem:
    - 1) Go to the Navigation Pane and click on the serial port to be connected to the modem; RS-232 Comms Port in this example. The Communications - RS-232 Comms Port window opens and the Driver Picker for Serial Port popup appears.
    - 2) Click the *Pick* button next to the *Driver:* parameter.
    - 3) Under the *Manufacturer* heading, select *<System>*.
    - 4) Under the *Driver* heading, select *PPP and Modem Client*.
    - 5) Click OK.

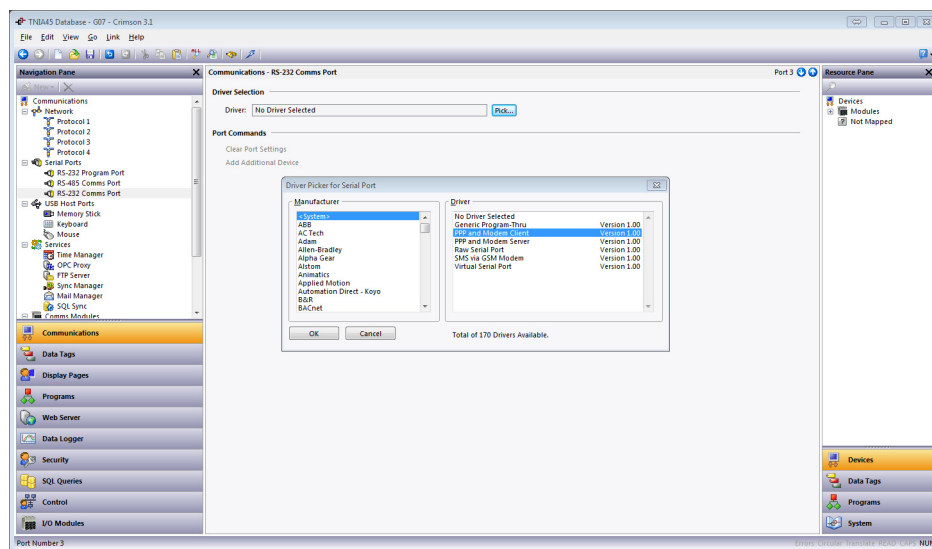


Figure 7.

- 6) Referring to Figure 8, under the Connection heading, set the `Connect Using:` parameter to *HSPA+ Modem*.
- 7) Set the `Connection Type:` parameter to *On-Demand*.
- 8) Set the `Manufacturer:` parameter, as applicable; if the manufacturer is not listed choose *Generic*.
- 9) Set the `Init String:` and `Additional Init:` parameters so that the modem uses the following settings (this will require referring to the modem's documentation for details):
  - a. No echo
  - b. Verbal result codes
  - c. Normal carrier detect operation
  - d. DTR override
  - e. No Flow Control
  - f. Modem must ignore RTS
  - g. DSR override, always on
  - h. Auto answer disabled
  - i. Escape character set to 43 decimal
  - j. 500 millisecond guard time for the escape code sequence (+++)
  - k. Autobaud or 115.2K baud
- 10) Set the `SMS Support:` parameter to *Enabled*.
- 11) Set the `Log File:` parameter to *Disabled*; only enable for troubleshooting purposes.
- 12) Leave all other parameters set at factory default.

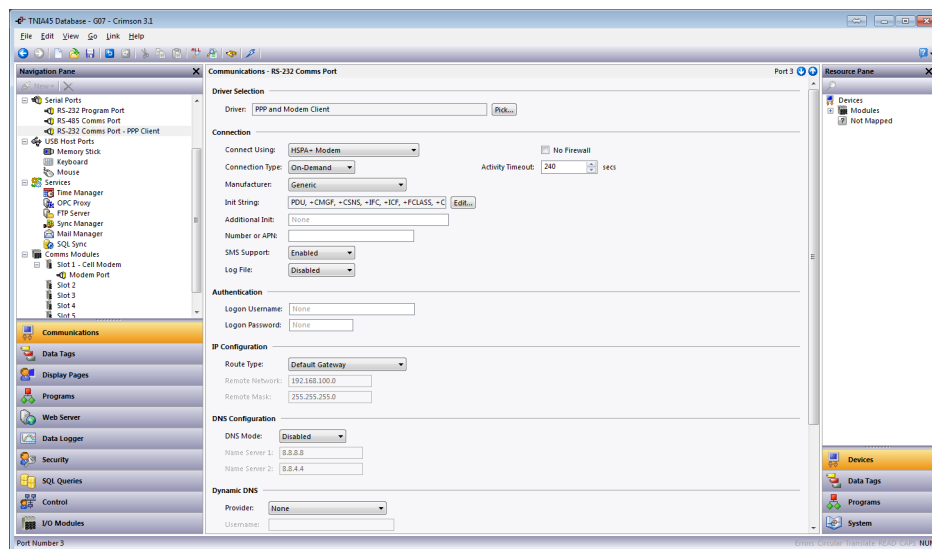


Figure 8.

b. To add/configure a Modem Module or Option Card, refer to Figure 9 and perform the following:

- 1) Scroll to the bottom of the Navigation Pane.
- 2) Click on an available Comms Module Slot (or Option Card); *Slot 1* in this example. The appropriate Communications - Comms Modules - Slot "X" screen and Module popup appear.
- 3) Click the *Pick* button next to the Module/Card: selection.
- 4) Select Cell Modem Module (or Option Card), as appropriate; *Cell Modem Module* in this example.
- 5) Click OK.

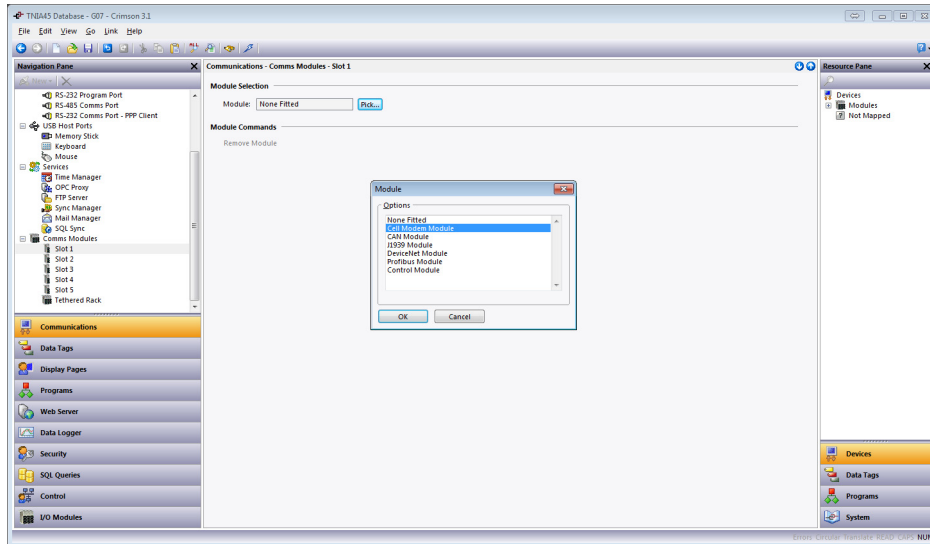


Figure 9.

- 6) Referring to Figure 10, go to the Navigation Pane and click on the *Modem Port* entry that auto-populated under the Cell Modem.
- 7) Click the *Pick* button next to the *Driver:* parameter.
- 8) Under the *Manufacturer* heading, select *<System>*.
- 9) Under the *Driver* heading, select *PPP and Modem Client*.
- 10) Click *OK*.

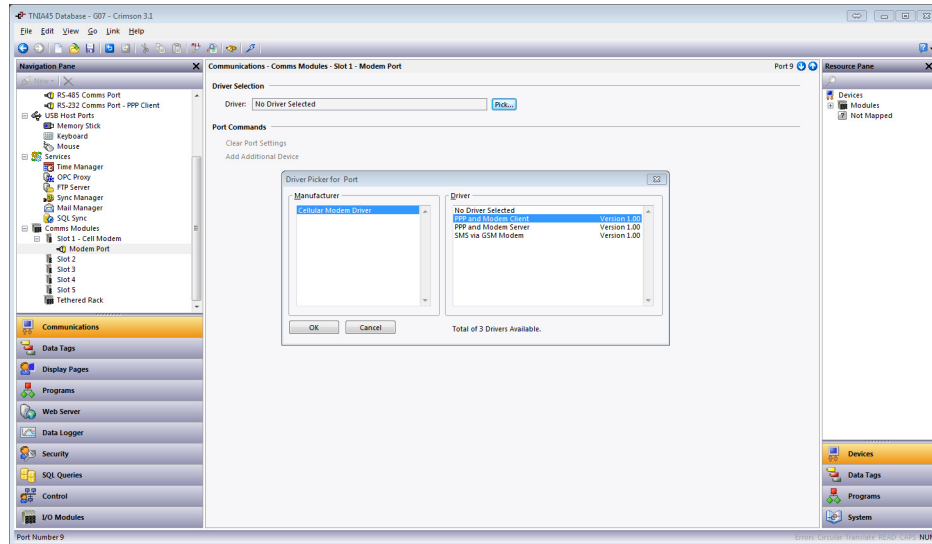


Figure 10.

- Referring to Figure 11, set the **Connect Using:** parameter to *HSPA+ Modem*.
- Set the **Connection Type:** parameter to *On-Demand*.
- Set the **Location:** parameter to the frequencies used where the application will be deployed; *850/1900 MHz* in this example.
- Set the **SMS Support:** parameter to *Enabled*.
- Set the **Log File:** parameter to *Disabled*; select enable only for troubleshooting purposes.
- Leave all other parameters set at factory default.

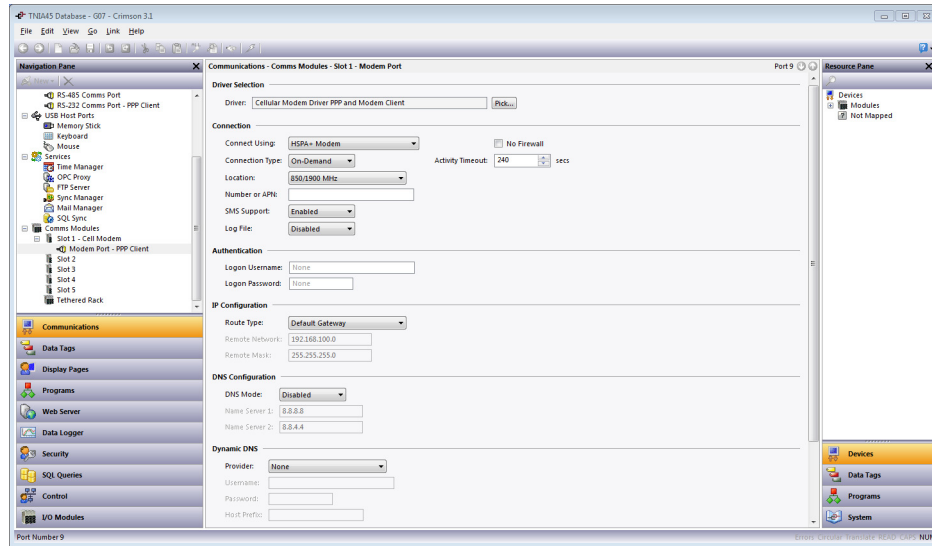


Figure 11.

## Configure Mail Manager

1. Referring to Figure 12, go to the Navigation Pane and click on *Mail Manager*.
2. Set the *Enable Mail Manager:* parameter to *Yes*.
3. Specify the *Unit Name:* parameter, as appropriate; *Crimson Device* in this example.

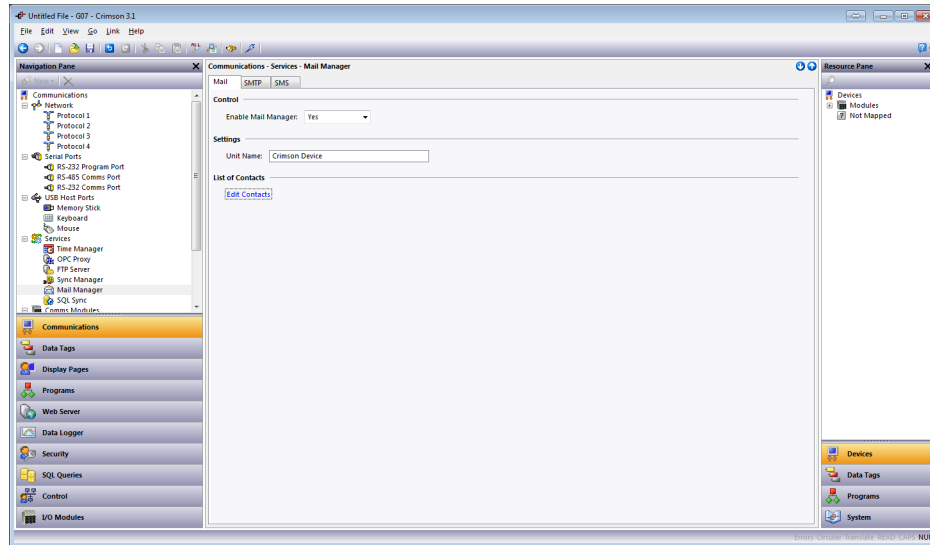


Figure 12.

4. Click the *Edit Contacts* button; the List of Contacts screen shown in Figure 13 appears.

5. Referring to Figure 13, define the names and addresses for all contacts. SMS contacts must contain only numbers and must begin with the country code.

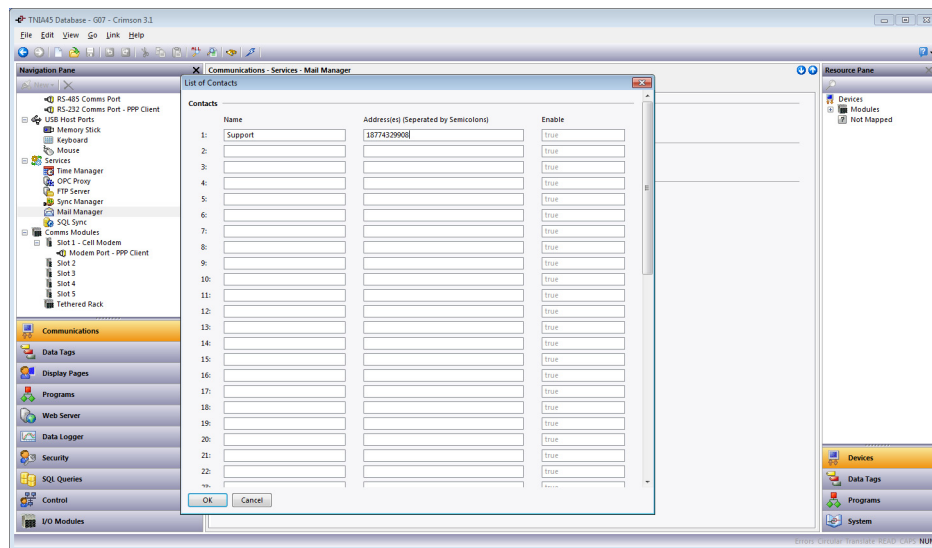


Figure 13.

6. Click OK.



## Configure SMS

The SMS tab is used to configure the Short Message Service transport that is supported when using a Global System for Mobile communication/General Packet Radio Service modem in association with the target device.

1. Referring to Figure 14, click on the **SMS** tab.
2. Set the **Transport Mode** parameter to *Enabled*.
3. Set the **Message Relay** parameter, as desired. When it is enabled and an alarm occurs, an SMS is sent to the previously configured numbers. One of those numbers can reply to the message, at which point the Red Lion device then relays that response to the other numbers that received the initial alarm message.
4. The **On Message** property is covered in the Receiving SMS section.

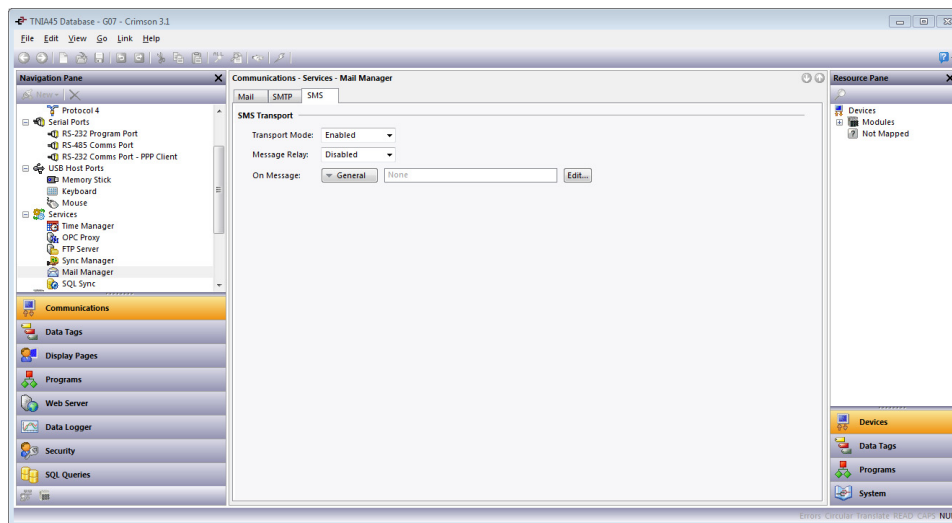


Figure 14.

## Sending Email and/or SMS

1. To send an Email and/or SMS based on an alarm, refer to Figure 15 and perform the following:
  - a. Navigate to the *Data Tags* section.
  - b. Select a tag which is configured with an alarm; *Tag1* in this example.
  - c. Click on the appropriate Alarm tab.
  - d. Use the drop down box next to the Mail To: parameter to select the recipient of the alarm.

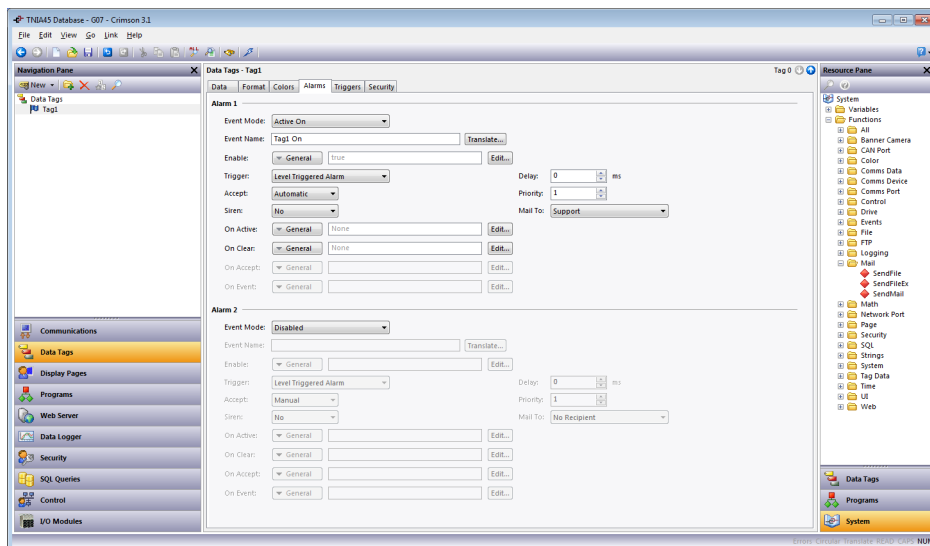


Figure 15.

2. Send using the desired function. Refer to the Reference Manual (*Help-Reference* from the Menu bar) for guidance on how to use the SendMail, SendFile, and SendFileEx functions.

## Receiving SMS

1. Referring to Figure 16, Navigate to the Programs section.
2. Create a new program.
3. Rename the program *RxSMS*.
1. Click the *Edit* button next to the `Prototype: void Program2(void)` parameter at the top of the Source tab; the Edit the Program Prototype popup appears.
2. In the Parameters section, under the Type heading, select the Type associated with 1 : to *String*.
3. Click *OK*.

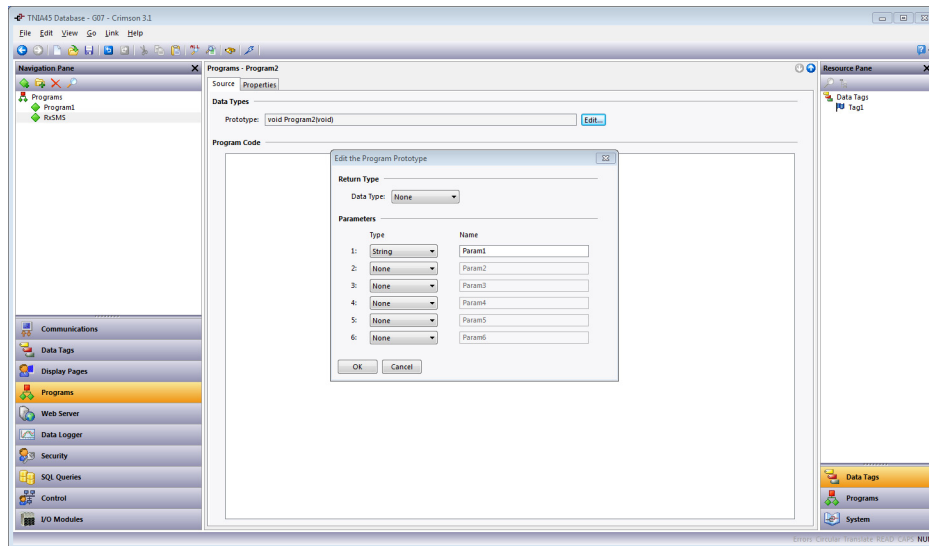


Figure 16.

4. Referring to Figure 17, navigate to the Communications section.
5. Go to the Navigation Pane and click on *Mail Manager*; the Communications Services - Mail Manager popup appears.
6. Click on the *SMS* tab.
7. Type the following in the *On Message :* field: *RxSMS(Data)*. Now, when an SMS is received, a data string is generated that contains the number from which the SMS originated and the message, separated by a colon ( : ). For example, a message of Hello World from 717-767-6511 would be represented by the following string: "17177676511:Hello World".

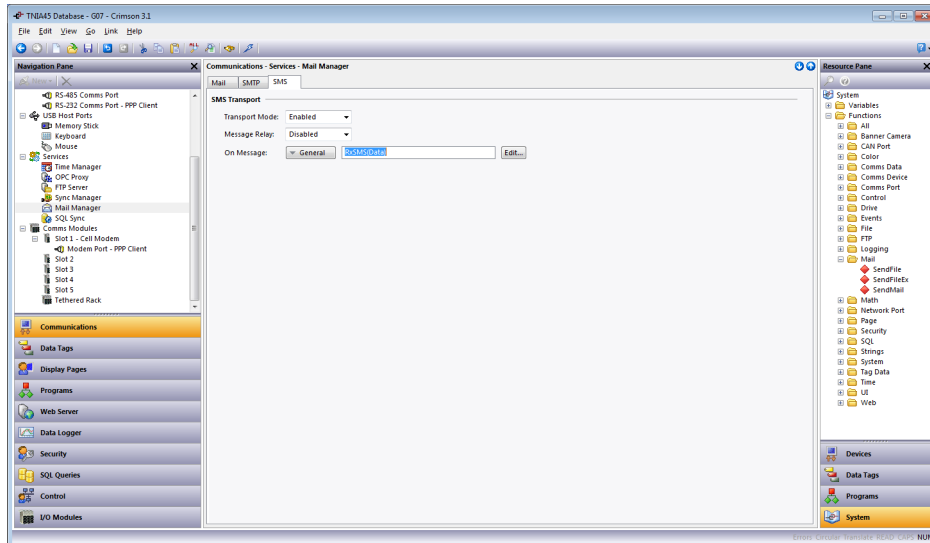


Figure 17.

8. Referring to Figure 18, go to the Navigation Pane and navigate to the Data Tags section
9. Create a new String tag.
10. Rename the new string tag *Test*.

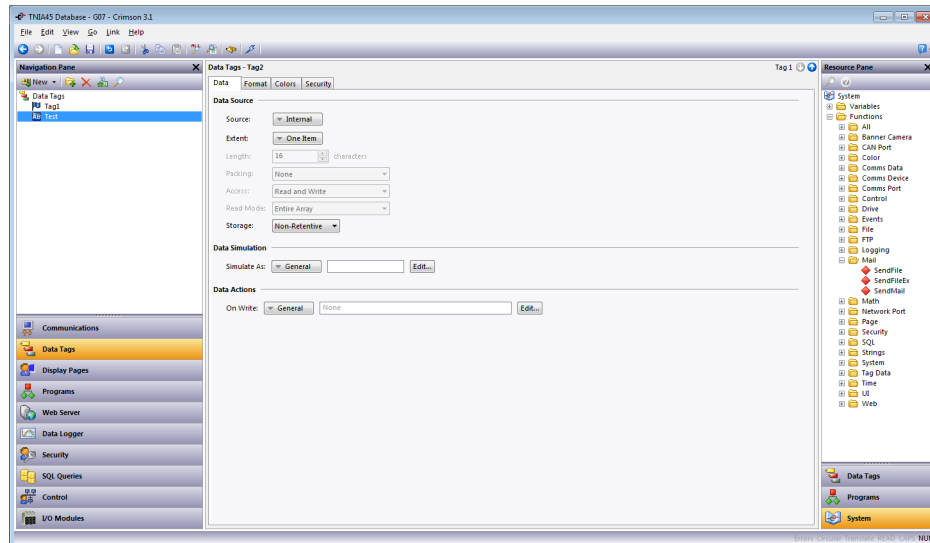


Figure 18.

11. Navigate to the Programs section.
12. Click on the RxSMS program.
13. Copy the code block from Figure 19 and paste it into the Program Code window in Crimson.

```
// declare local variables
int colon;
cstring message;

// find the colon that separates the phone number from the message
colon = Find(Param1, ':', 0);

// grab just the message and discard the number it came from
message = Right(Param1, Len(Param1)-colon-1);

// populate the Test tag with the message that was received
Test = message;
```

Figure 19.

14. Translate the program using the Ctrl+t shortcut.

**Disclaimer**

It is the customer's responsibility to review the advice provided herein and its applicability to the system. Red Lion makes no representation about specific knowledge of the customer's system or the specific performance of the system. Red Lion is not responsible for any damage to equipment or connected systems. The use of this document is at your own risk. Red Lion standard product warranty applies.

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For more information: <http://www.redlion.net/support/policies-statements/warranty-statement>

