# Setup Manual and Programming Reference

# RGA Ethernet Adapter

**Stanford Research Systems**

*Revision 1.05 (11/2010)*

## Certification

Stanford Research Systems certifies that this product met its published specifications at the time of shipment.

## Warranty

This Stanford Research Systems product is warranted against defects in materials and workmanship for a period of one (1) year from the date of shipment.

## Service

For warranty service or repair, this product must be returned to a Stanford Research Systems authorized service facility. Contact Stanford Research Systems or an authorized representative before returning this product for repair.

# Contents

# Unpacking

## Checklist

- Open the box and inspect all components of the RGA Ethernet Adapter (REA).
- Report any damage to Stanford Research Systems immediately.
- Compare the contents of the shipping boxes against your original order and the checklist below. Report any discrepancies to Stanford Research Systems immediately.

## Package Contents

- RGA Ethernet Adapter
- 5V Power supply & 6' USB cable (type A male to type B male)
- 3' RS232 cable
- 14' straight-through Ethernet cable (CAT5e or comparable)
- 1 CD (RGA software & REA setup software, USB driver, electronic Manuals)
- REA manual
- Cover for RGA (Optional)

# Specifications

### Interface :

| | |
|---|---|
| Ethernet interface | 10/100 BASE-T (RJ-45) female connector |
| USB interface | USB type B female connector<br>USB 2.0 compliant full-speed device<br>Enumeration to communication device class (USB CDC) |

### Internet Protocols supported

| | |
|---|---|
| Protocols | ARP, IP, ICMP, UDP, TCP, Telnet, DHCP, FTP,<br>SICP (SRS Internet Configuration Protocol) |

### General

| | |
|---|---|
| Power requirement | 5 Vdc , 0.5 Amp through USB type B female connector |
| Dimensions | 10.7 cm H x 11.2 cm W x 3.0 cm D<br>(4.2 in H x 4.4 in W x 1.2 in D) |
| Weight | 0.2 kg (0.1 lb. ) |

Chapter 1

# Getting Started

The RGA Ethernet Adapter (REA) allows a host PC to communicate with an SRS RGA over Ethernet. The adapter converts between the RS232 port of the SRS RGA (baud rate of 28.8k) and Ethernet 10/100 Base-T.

As shown in the figure below, the REA has 3 connectors: Serial DB9 male to SRS RGA, an RJ45 to your network (with link speed and activity indicators), and a USB/B for power (and optional setup). The serial number and MAC address of the REA can be found on the back of the REA. A push button labeled IP SET on the back of the REA must be depressed *when power is applied* to put the REA into setup mode.
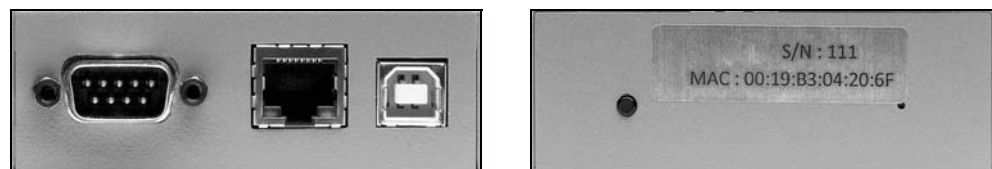


*Figure 1-1 Front and back panels*

Five LED indicators on the top cover of the REA indicate activity and status.

| LED indicators | Activity |
|---|---|
| POWER (Red) | ON = power on, OFF = power off |
| ETHERNET (Green) | ON = in "Ready for IP setup" state<br>OFF = no data activity<br>Fast Blinking = data activity<br>1 Hz blinking = DHCP running<br>4 Hz blinking = DHCP failed |
| USB (Green) | Blinking = data activity, OFF = no activity |
| RGA Tx (Yellow) | Blinking = data from RGA, OFF = no activity |
| RGA Rx (Yellow) | Blinking = data to RGA, OFF = no activity |

*Table 1-1 LED indicators*

Chapter 2

# Configuration

## REA Configuration Methods

The network configuration can be performed in three ways: Automatically using your network's Dynamic Host Configuration Protocol (DHCP) server, manually for a static IP over Ethernet, or manually over USB. Each method will be described in detail. The RGA software works equally well with the REA in static or dynamic IP modes.

| | **Manual Static IP over Ethernet** | **DHCP over Ethernet** | **Manual Static IP over USB** |
|---|---|---|---|
| Software | 'REASetupUtility' | 'REASetupUtility' | Serial communication software |
| Prerequisite | Details of IP address, Subnet mask, Gateway | DHCP server | Details of IP address, Subnet mask, Gateway |
| Pros | Straight forward menus guide you through the process | Easiest | Best for programmers |
| Cons | | DHCP server may not be available on your network. | Unforgiving, cryptic |

*Table 2-1 Comparison of configuration methods*

Most users will prefer to use the REASetupUtility over Ethernet as it displays information about other REA units that may be present on the network and guides the user through the setup procedure. These users should:

1. perform the Software Installation and Quick Cable Check (instructions follow)
2. Use the REASetupUtility to configure the adapter (Chapter 3)

Users interested in configuring the REA manually over USB should:

1. perform the Software Installation and Quick Cable Check (instructions follow)
2. Read Chapter 4 - Remote Programming
3. Follow the instructions in Chapter 5 to install the optional USB driver and manually configure the REA

# Software Installation and Quick Cable Check

Setup of the REA begins with installation of the software and a quick check of the cabling and power:

## 1.  Install the RGA Windows software

Install the RGA software from the CD. Make sure the "Setup REA Utility" install option is *checked* (see screenshot below).

You must install the software with *administrator account privileges* because the RGA program needs full "write" privileges.
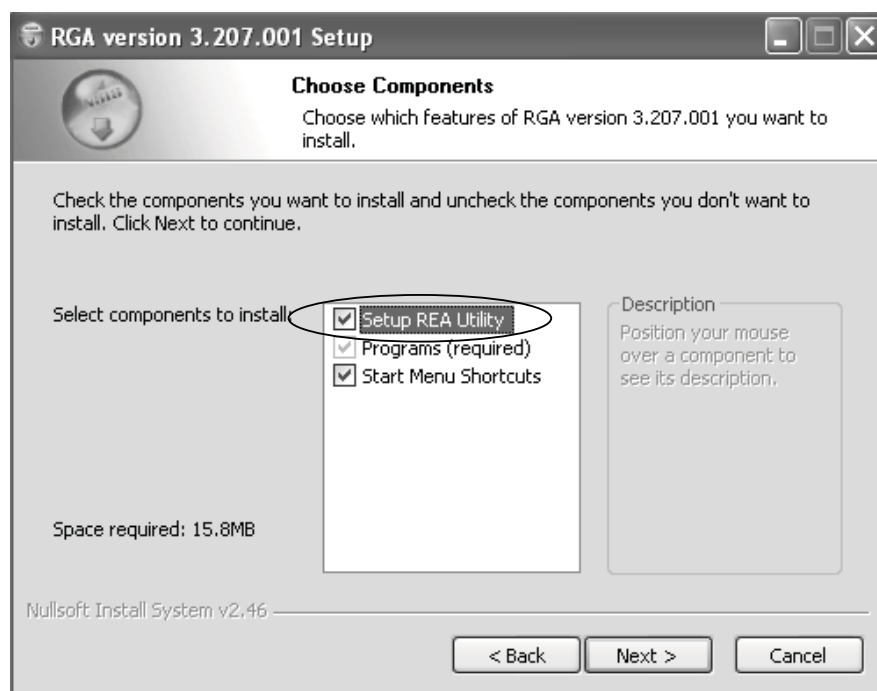


*Figure 2-2 Choose 'Setup REA Utility' in the RGA installer options*

## 2.  Apply power to the REA

Power up the REA by connecting the REA to the USB power adapter. Initially all the LED's are on for one second after which only the POWER LED should be on.

## 3.  Connect to the network

Connect an Ethernet cable between the RJ45 connector on the REA and your network. The green LED on the RJ45 connector should be on or flashing.

RJ45 connector front

*Figure 2-3 LED indicators on the RJ45 Ethernet port*

Green LED for activity (ON = Linked, Blinking = Active, OFF = Disconnected)

Yellow LED for speed (ON = 100 BASE-T, OFF = 10 BASE-T)

Chapter 3

# REA Setup Utility

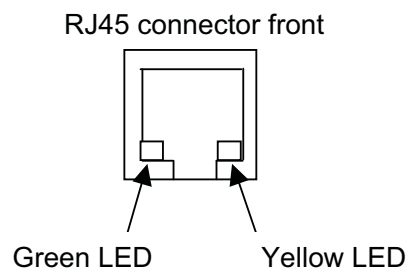SRS provides the 'REASetupUtility' software for Ethernet configuration of the REA. When the 'Search' button is clicked, the software will collect information from all REA units that are currently connected to your local area network (LAN). If no information is shown after the search, it could be due to firewall software running on your computer. If this is the case, temporarily disable the firewall and try again.
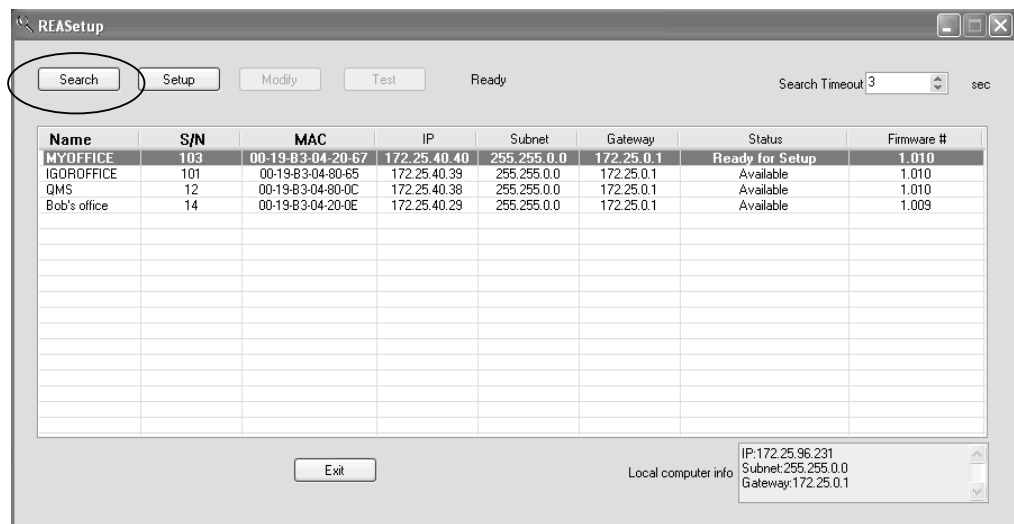


*Figure 3-1 REASetupUtility window after successful 'Search'*

In the window, the Status column indicates the status of each REA on your LAN. The following table summarizes the possible states of the REA after the 'Search' button is clicked.

As shown above, all adapters on the same network will be visible and can be setup from a single computer.

| Status | Meaning |
|---|---|
| Ready for Setup | REA is in IP setup mode and waiting to be configured. |
| Available | REA is ready to use with the RGA software. |
| Out of Subnet | The IP address and the subnet mask are not on the same network as your computer. This will prevent the RGA software from connecting to the REA from your computer. If you intend to operate the REA on a different network from the one your computer is currently on, this may be correct. Otherwise, ask your network administrator to review the network values (IP address, subnet, and gateway). |
| IP Change Failed | The last IP setting failed (no change occurs). Try again with a different IP address. |
| IP Conflict | There is another device using the same IP address online when REA is powered on. If this happens, the ETHERNET LED will blink very fast (4 times each second) for 3 minutes. Changing the IP address on the REA or the other device is necessary. If the IP address of the other device is changed, turn REA off and on to get the 'Available' status. |
| Occupied | REA is already connected to another host computer. |
| DHCP Running | DHCP is in progress. |
| DHCP Failed | The DHCP negotiation has failed. This is usually because there is no DHCP server active on your network. It might also be due to a network security measure such as MAC filtering. Ask you network administrator for help. |

*Table 3-1 REA states after 'Search'*

# Configuration using the REASetupUtility

After choosing the configuration method based on the information in Table 2-1, you should follow *either* the manual *or* the automatic procedure. *Do not do both*.

## Manual Static IP Setup

1.  Fill out the table below with the network values obtained from your network administrator:

    IP address          _____    _____    _____    _____

    Subnet mask         _____    _____    _____    _____

    Gateway             _____    _____    _____    _____

2.  Power up the REA and make sure all the cables are connected.

3. Disable any anti-virus software or give permission to the 'REASetupUtility' software. Then start 'REASetupUtility' from Start>All Programs>SRS>RGA.

4. Reboot the REA into IP setup mode by following these steps:
    i. Disconnect the USB power cable from the USB port of the REA.
    ii. While pushing the IP SET switch, reconnect the USB power cable.

5. The green ETHERNET LED on top of the REA should be on. If not, repeat step 4 above. The REA will remain in the 'Ready for Setup' state for 5 minutes. If setup does not occur during this time, the REA will return to its previous state.

6. In the 'REASetupUtility' software, click the 'Search button.

7. Select the row with the 'Ready for Setup' status, then click the 'Setup' button (see Figure 3-1). The following dialog box will appear.
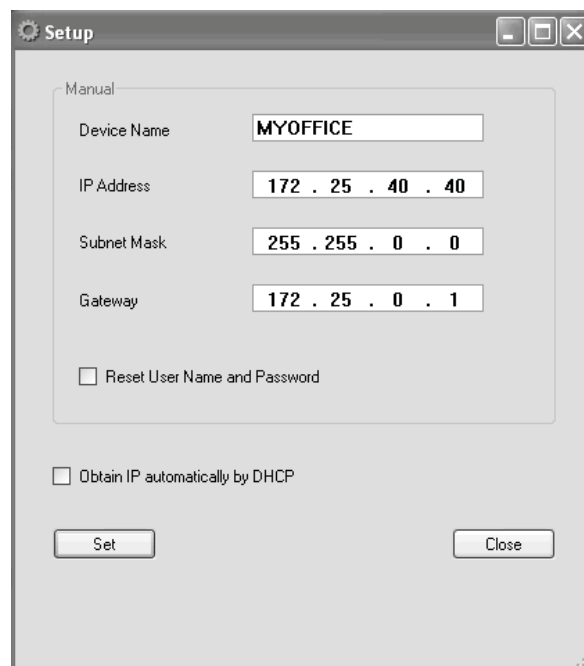


*Figure 3-2 Network setup dialog box*

8. In the pop-up dialog, type in the network values from step 1. To avoid confusion, give the REA a descriptive name here. Then click 'Set'.

9. If the setup is successful, the status should now show 'Available' in the REASetup window and the green ETHERNET LED on top of the REA will be off.

10. The REA is now ready to use. See page 16 - Login Parameter Modification to change the user name and password of the REA.

## Automatic IP Setup Using DHCP

If there is a DHCP server on your network, the DHCP function in the REASetupUtility program will automatically configure the IP address, subnet, and gateway. After the REA is set by this function, it will automatically use DHCP to obtain its network addresses whenever it powers on. If DHCP is no longer desired, configure the network values

manually (instructions above). After verifying with your network administrator that your network has a DHCP server, follow these steps:

1.  Skip step 1 of the manual setting procedure above. Follow steps 2 through 7 until you reach the setup dialog box (Figure 3-2) for the selected REA.

2.  In the setup dialog box, mark 'Obtain IP automatically by DHCP'. The manual edit section will be dimmed. Click the 'Set' button.

3.  The REA will attempt DHCP negotiation for up to 90 seconds. During this process, the ETHERNET LED on top of the REA will blink at 1 Hz.

4.  Upon successful completion of the DHCP negotiation, the ETHERNET LED will turn off. Clicking the 'Search' button again will display a status of "Available".

5.  The REA is now ready to use. To avoid confusion, it is a good idea to give the REA a descriptive name. See below - Login Parameter Modification to change the user name, password and device name of the REA.

# Troubleshooting

If there is a conflict with the IP address (already assigned to another device or computer on your network) during manual IP setup, the "Failed to Change" status will appear after clicking the 'Set' button.

"Out of Subnet" status appears when the host computer and the REA do not have the same network prefix in their IP address according to the subnet mask. (The network address of the host PC is listed in the bottom right of the window.) In order to use the REA on the same LAN, the network prefix portion of the IP address should match the computer. If the REA will be used on a different network, it is fine to be out of subnet.

If the DHCP setup fails, the ETHERNET LED will blink at 4 Hz. Clicking the 'Search' button of the REASetupUtility program will confirm the failure by showing "DHCP Failed" in the status column.

# Login Parameter Modification

After the IP setup of the REA completes successfully, it is a good idea to modify the User name and Password.

1.  Select an REA whose status is 'Available'.

2.  Then click the 'Modify' button.

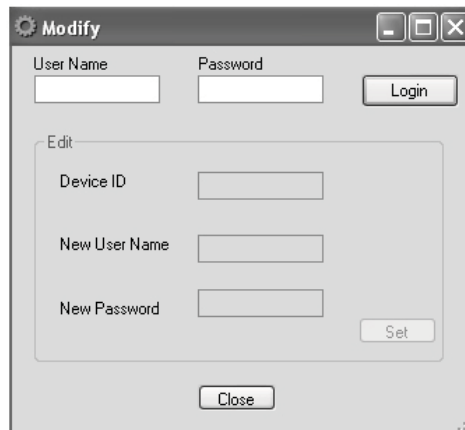3.  The Modify dialog box will appear as shown below (Figure 3-3).

*Figure 3-3 Modify User Name, Password and Device Name dialog box*

4. Login using the default User name and Password.

   Default Username:   Admin

   Default Password:   Admin

   A successful login makes the 'Edit' section active.

5. Type in a new Username, Password and Device Name.

   New Username: _____        New Password: _____

6. Click 'Set'.

7. If the modification is successful, close the dialog box by clicking 'Close'.

If the User Name and/or Password settings are lost, they can be reset to the default values in the Network Setup dialog box (Figure 3-2). By marking 'Reset Name and Password' and then clicking 'Set', these parameters are reset to the default. This brings up the 'User Password Info' dialog box (Figure 3-4) to set new values. Type in a new User Name and Password, then click 'Apply' to change.
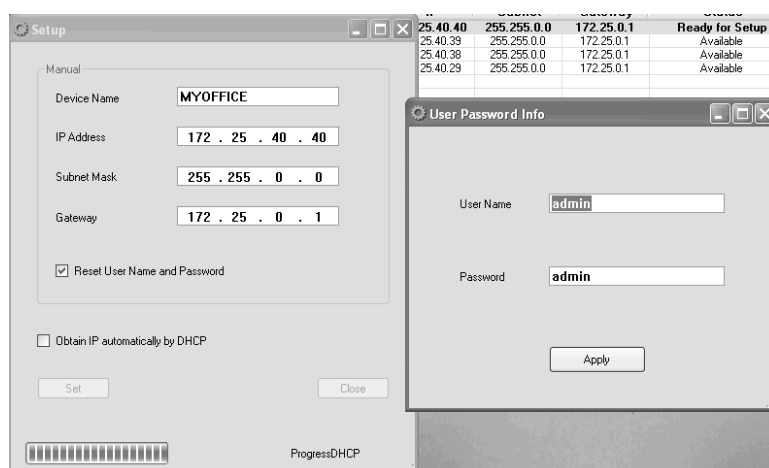


*Figure 3-4 Reset Name and Password followed by the User Password Info dialog*

# Configuration Test

When an REA with 'Available' status is selected in REASetupUtility, the 'Test' button will be active. This button tests the Ethernet connection between the PC and the selected REA and between the PC and the RGA which is connected to the REA.

1. Select an REA with 'Available' status. The 'Test' button will be activated.

2. Click 'Test'. The 'AskUserPass' dialog box will appear.
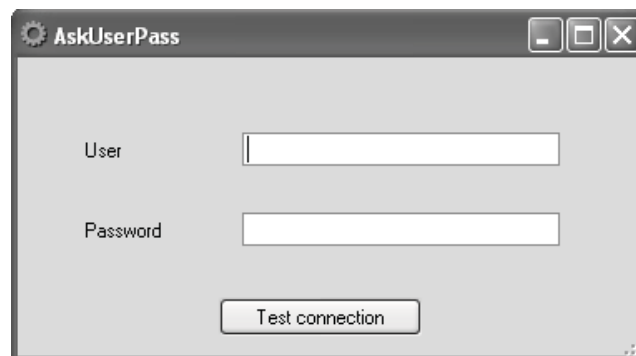


*Figure 3-5 REA login dialog box*

3. Type in the proper login parameters; User Name and Password, then click 'Test connection'.

4. The results of the connection test will appear in the 'Test results' dialog box below.

There are three steps in this test; login test, REA Ethernet connection test, and RGA connection test. There is no setup for the connection between the REA and the RGA. Only the physical connection with a DB9 male/female straight cable is needed. The RGA should be on for this test. Figure 3-6 below shows the successful results of this test.



*Figure 3-6 Test results box*

# Connecting to the RGA Through Ethernet

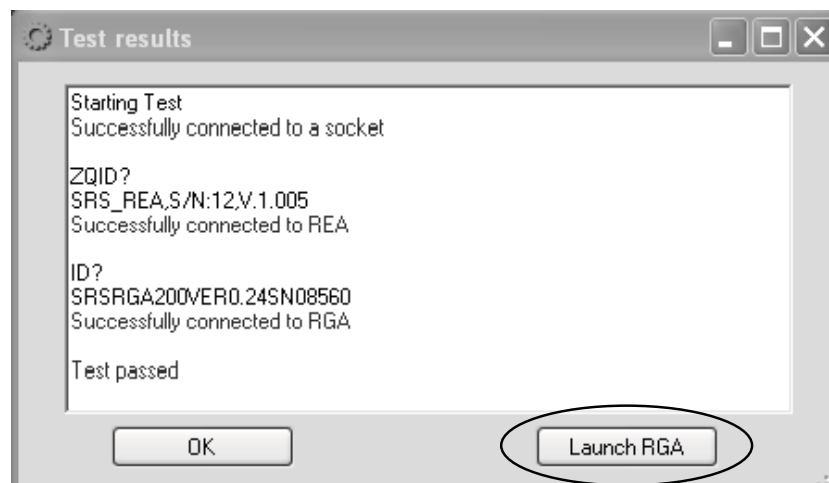## Connection from 'REASetupUtility'

After passing the connection test successfully, the 'Launch RGA' button in the 'Test results' dialog box is active as seen in Figure 3-6 above. Clicking 'Launch RGA' will start the RGA Windows software (RGA.exe) to connect to the RGA over Ethernet via the REA. Once connected, the RGA software will appear with the connection information below the toolbar. Now you are ready to collect RGA data.
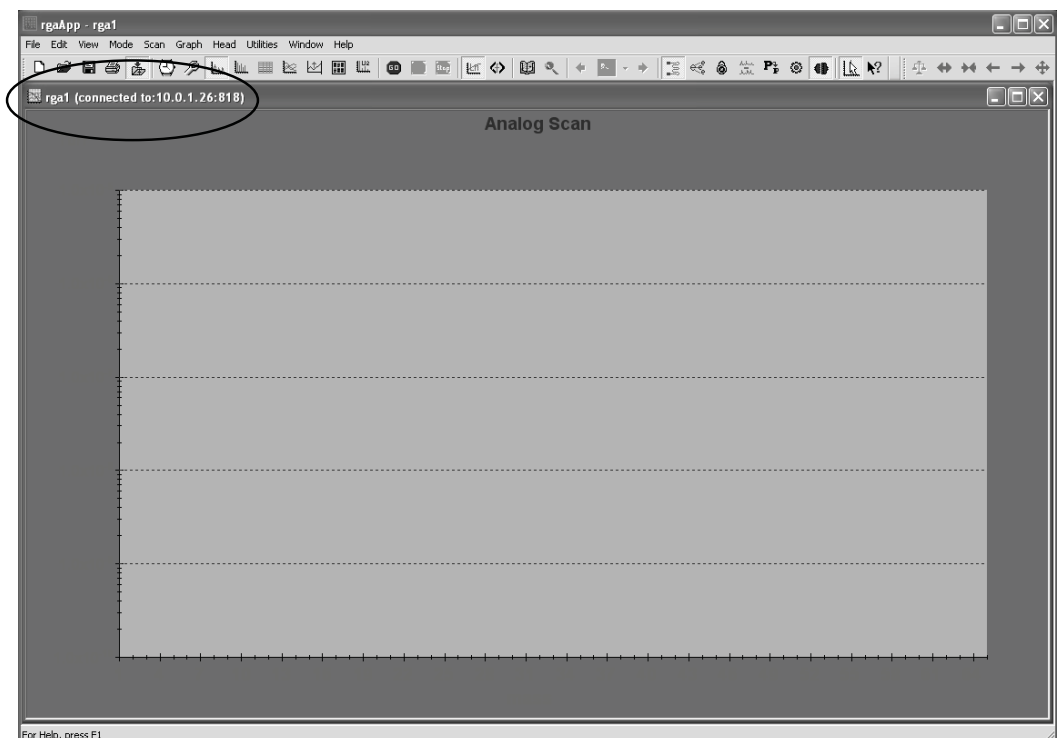


*Figure 3-7 RGA software screenshot showing connection information below the toolbar*

## Connection from within the RGA Software

This section describes how to establish a connection to an REA/RGA from within the RGA Windows software. This requires an REA with "Available" status (described previously) connected to an RGA with a serial cable. The REA and the PC are connected via LAN or cross-over Ethernet cable to each other. For a detailed reference of the RGA software, please refer the RGA manual or 'Help' in the RGA software.

1.  Connect all the cables.
    *   REA to RGA with an RS232 DB9 cable
    *   REA to LAN or PC with CAT 5e Ethernet cable
    *   REA USB to USB power adapter with a USB cable

2.    Turn on the RGA.

3.    Run 'RGA'  ▦ RGA  (Start>All Programs>SRS>RGA).

4.    Click the Connection Settings button ⚙.

5.    Select the TCP/IP tab and check 'Enable TCP IP Connections'.

6.    Click the 'Add' button and enter the IP, User and Password into the dialog box. The port value is 818 for the REA. Click 'OK' to add this device.
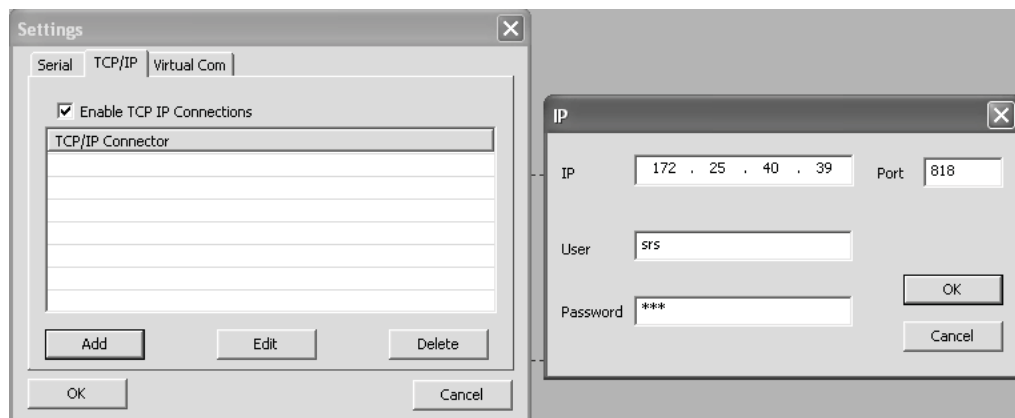


*Figure 3-8 Connection Settings and Ethernet dialog box*

7.    Make sure the new TCP/IP Connector is checked and click 'OK' again to confirm the settings.

8.    Click the Connection button ⬢. The dialog box below will appear with Connector information.
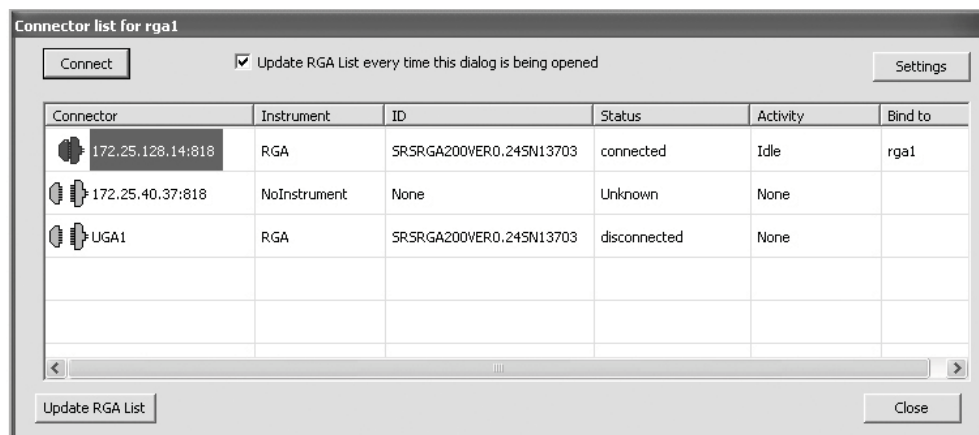


*Figure 3-9 Connection Settings and Ethernet dialog box*

9.    Select the proper entry identified by IP address or Device ID.

10.   Click the 'Connect' button and close the dialog box. The main RGA screen shown in Figure 3-7 will appear and the RGA is ready to use.

Chapter 4

# Remote Programming and Errors

## Introduction to Remote Commands

The REA may be controlled via Ethernet interface or USB interface. Any computer supporting one of these interfaces can control the REA remotely.

### Communication via Ethernet

You may connect the REA either directly to the host computer with a cross-over cable, or to a hub or switch with a straight-through CAT5 cable. To connect the REA to a network you will need an IP (Internet Protocol) address, subnet mask, and gateway address. See your network administrator to obtain addresses appropriate for your network environment.

### Communication via USB

The REA has a USB B type receptacle for USB connection. When the REA is connected to a host, the host enumerates the REA (and also powers the REA). Refer to Chapter 5 for details. Once the enumeration completes, a user communicates with the REA as a serial device.

### Command Format

Communications with the REA uses ASCII characters. The REA is case insensitive, all commands may be in either UPPER or lower case. A command starts with the character following a termination character and ends with the following termination character. The REA uses carriage return, <CR>, for a terminator.

The REA has two separate sets of commands that are processed differently. One is the REA command set, which is processed by REA, and the other is the RGA command set, which is directed to the attached RGA. The character 'Z' is used as a prefix character to mark commands specific to the REA. A command starting with 'Z' is handled by the REA and all other commands are handled by the attached RGA.

A command in the REA command set consists of a four character command mnemonic with optional ?, arguments if necessary, and a command terminator. The command, arguments and terminator may be separated by spaces. The terminator must be carriage return <CR>. No command processing occurs until a <CR> is received.

The present value of a particular parameter may be determined by querying the REA for its value. A query is formed by appending a question mark '?' to the command mnemonic and omitting the desired parameter from the command. Values returned by the REA are sent as a string of ASCII characters terminated by a carriage return <CR>.

# Command Syntax

The four letter mnemonic (shown in CAPS) in each command sequence specifies the command. The rest of the sequence consists of parameters. Parameters shown in { } are not always required. Generally, parameters in { } are required to set a value in the REA. The present value of a parameter may be determined by sending a query command.

- Commands that MAY be queried show a question mark in parentheses (?) after the mnemonic.
- Commands that are ONLY queries have a '?' after the mnemonic, with no parentheses.
- Commands that MAY NOT be queried have no '?'.

A query is formed by including the question mark ? after the command mnemonic and omitting the queried parameter from the command. The query parameters shown in { } are NOT sent with a query. The query returns the value of these parameters. Values are returned as a string of ASCII characters (unless otherwise noted).

Do NOT send ( ) or { } as part of the command.

For example, the command sequence ZPTO (?) {n} is used as follows.

|  |  |
|---|---|
| ZPTO 100 | Set to 100 |
| ZPTO ? | Query value |

Variables are defined as follows.

|  |  |
|---|---|
| n | integer |
| i.i.i.i | Dotted decimal integer format for IP address, subnet mask and default gateway address (i is in the range 0-255) |
| s | text string for login name, password and device name |

All integer variables should be expressed in integer format (i.e. the number five is 5, not 5.0 or 0.5E1). Strings are sent as a sequence of ASCII characters.

# Query Commands

| ZQID? | **Identification** |
|---|---|
| | Query ID string. |

| ZQFV? | **Firmware Version** |
|---|---|
| | Query current firmware version. |

| ZQSN? | **Serial Number** |
|---|---|
| | Query the serial number of the adapter. |

| ZQMC? | **MAC Address** |
|---|---|
| | Query Media Access Control (MAC) address for the Ethernet port. |

# Error Query Commands

| ZERR? | **Query Error Code** |
|---|---|
| | Use "ZERR?" to read the error code. The most recent 10 error codes are stored on the error stack. If there are more than 10 errors, the last error will replaced with 126 ("Too Many Errors"). "ZERR?" returns the latest error first. You must use ZERR? repeatedly until a '0' is returned. A return value of '0' indicates that the error stack is empty and there are no errors to be read. For the complete list of error codes, refer to the table at the end of this chapter. |

| ZEDS? n | **Error Message** |
|---|---|
| | The ZEDS? n command queries the verbose error message string corresponding to error number n (9 to 126 as returned with ZERR?). The parameter n is required. |

# Parameter Setting Commands

Parameters changed with the following commands are saved in EEPROM, preserved after power off and loaded when the REA starts again.

| ZPIP(?) {i.i.i.i} | **IP Address** |
|---|---|
| | The ZPIP i.i.i.i command sets the Internet Protocol (IP) address. The ZPIP? query returns the current IP address setting. |

**Example**
ZPIP 192.168.1.12          sets the IP address to 192.168.1.12
ZPIP?                            returns the current IP address

| | |
|---|---|
| **ZPSM(?) {i.i.i.i}** | **IP Subnet Mask** |

The ZPSM i.i.i.i command sets the Internet Protocol (IP) subnet mask. The ZPSM? query returns the current IP subnet mask setting.

**Example**
ZPSM 255.255.255.0      sets the IP subnet mask to 255.255.255.0
ZPSM?                   returns the current IP subnet address

| | |
|---|---|
| **ZPGW(?) {i.i.i.i}** | **IP Default Gateway** |

The ZPGW i.i.i.i command sets the Internet Protocol (IP) default gateway. The ZPGW? query returns the current IP default gateway setting.

**Example**
ZPGW 192.168.1.1        sets the IP default gateway to 192.168.1.1
ZPGW?                   returns the current IP gateway address

| | |
|---|---|
| **ZPNM(?) {@s}** | **User Name** |

The ZPNM @s command sets the user name string s. The ZPNM? query returns the current user name.

The command accepts only alphanumeric characters, a-z, A-Z, and 0-9, up to 15 characters.

**Examples**
ZPNM @SRSRGA            sets the user name to "SRSRGA"
ZPNM @                  clears the user name
ZPNM?                   returns the current user name string

**Note**
With a blank user name and password, a user can login by typing carriage returns only.

| | |
|---|---|
| **ZPPW(?) {@s}** | **Password** |

The ZPPW @s command sets the password to string s. The ZPPW? query returns the current password.

The command accepts only alphanumeric characters, a-z, A-Z, and 0-9, up to 15 characters.

**Examples**
ZPPW @SRSRGA            sets the password to 'SRSRGA'
ZPPW @                  clears the password.
ZPPW?                   returns the current password string

**Note**
With a blank user name and password, a user can login by typing carriage returns only.

| | |
|---|---|
| **ZPDN(?) {@s}** | **Device Name** |

The ZPDN @s command sets the device name to string s. The ZPDN? query returns the current device name.

The command accepts only alphanumeric characters, a-z, A-Z, and 0-9, up to 15 characters.

**Examples**
ZPDN @DEVICE1        sets the device name to 'DEVICE1'
ZPDN @               clears the device name
ZPDN?                returns the current device name

| | |
|---|---|
| **ZPTO(?) {n}** | **TCP/IP Connection Timeout** |

The ZPTO n command sets the TCP/IP connection timeout to n seconds (3 to 1800). The ZPTO? query returns the value n. If TCP/IP communication is inactive for the timeout period, the connection will be closed. The default value is 30 seconds. A power reset is needed to activate the changed value.

| | |
|---|---|
| **ZPRY(?) {n}** | **Reply to Ping or REA Search** |

The ZPRY n command sets the reply mode to ping (n=0) or REA Search (n=1). The default value is n=1. ZPRY? queries the mode n.

# Error Codes

The REA detects and records various errors. Up to 10 error codes are stored on the error stack and may be queried with the ZERR? command. When more than 10 errors are generated, the last error code on the stack will be changed to 126 ("Too Many Errors") and subsequent errors are discarded.

Users also have to pay attention to errors from the attached RGA. The RGA error status is monitored with the RGA error query command ER? Please refer to the RGA manual chapter 7 and chapter 9 for details.

The ZEDS? n command returns the error message string for error code n. For example, "ZEDS? 13" returns "Missing Parameter".

The table below lists the REA error codes.

*Table 4-1 Error codes, messages and descriptions*

| Code | Message String | Description |
|------|----------------|-------------|
| 1-8 | Reserved | |
| 9 | "Invalid Command" | The command string does not start with a valid command name. |
| 10 | "Incomplete Command" | The command string ends without a ? or a parameter. |
| 11 | "Illegal Command" | Either a set only command was issued as a query or a query only command was issued as a set. |
| 12 | Reserved | |
| 13 | "Missing Parameter" | A second parameter in a set command is missing. |
| 14 | "Extra Parameter" | Extra character(s) follow a valid command. |
| 15 | "Out of Range" | A parameter is out of range. |
| 16 | "Bad Parameter" | A parameter is misformatted, such as an IP address, a subnet mask, a gateway address, a login name, or a password. |
| 17 | "Missing Comma" | Command string does not have a comma after the first parameter. |
| 18-19 | Reserved | |
| 20 | "Not a Number" | A parameter is not a number. |
| 21 | Reserved | |
| 22 | "RGA on Network" | When TCP/IP connection is open, the serial communication cannot talk to RGA. |
| 23 | "Command Buffer Full" | Too many commands to process before time critical operations occur. Some of the commands are rejected. |
| 24 | "RGA Buffer Full" | The RGA received too many commands to process in time. Some of the commands are rejected. |
| 25 | Reserved | |
| 26 | "String Too Long" | The login name and password should be 15 characters or less. |
| 27 | "Illegal Character" | The login name and password changing commands, ZPNM and ZPPW accept alphanumeric characters 0-9, A-Z, a-z only. |
| 28 | "RGA OFF" | Communication to RGA is not allowed when the RGA is off. |
| 29-125 | Reserved | |
| 126 | "Too Many Errors" | More than 10 errors have occurred since the last "ZERR?" command. Subsequent errors have been discarded. |

Chapter 5

# Configuration via USB

## USB Driver Installation

If you choose to connect the REA USB cable to a computer, Windows should detect it and start the "New Device Setup" wizard. Installation of the USB device driver is *not necessary* unless you intend to manually configure the REA or program the RGA via USB using a serial communications program.

1. Insert the provided CD into the PC.

2. Connect the adapter to any USB port of the PC using the provided USB cable.

3. Windows will detect the new hardware and start the "New Device Setup" wizard. If your PC does not recognize the REA, try inserting a USB hub between the REA and the PC.

4. At the start of 'Found New Hardware Wizard', when Windows asks to search for a driver, choose 'No, not this time' to use the driver provided on the CD.

5. Next, select 'Install from a list or from a directory'.

6. Navigate to the directory where the SrsRgaCommAll.inf file is (on the CD or in your download directory if you are upgrading using the SRS web site). Then OK.

7. Press 'Continue Anyway' at the Microsoft credential warning.

8. After successful setup, Windows will indicate that the new hardware is "Ready to use".

9. Check the assigned COM port from Control Panel>System>Hardware>Device Manager>Ports. A new COM port for SRS RGA Communication should appear.

## Manual IP Configuration over USB

After the USB COM port driver has been installed (above), any serial communication software (e.g. HyperTerminal) can communicate with the REA. The following example uses the serial communication software 'rgacom.exe' (included in the RGA software) to demonstrate the configuration process. The RGA control software (on the REA CD or downloaded from thinkSRS.com) must be installed before following this example.

1. Get the appropriate network values (IP address, Subnet mask, Gateway) from your network administrator.

2. Make sure that the adapter is still connected through USB to the PC.

3.  Run 'rgacom.exe' in the SRS\RGA directory which resides in the Program Files directory.

4.  Select the assigned COM port from the above procedure and click the 'Connect' button. The connector will change to green when connected.
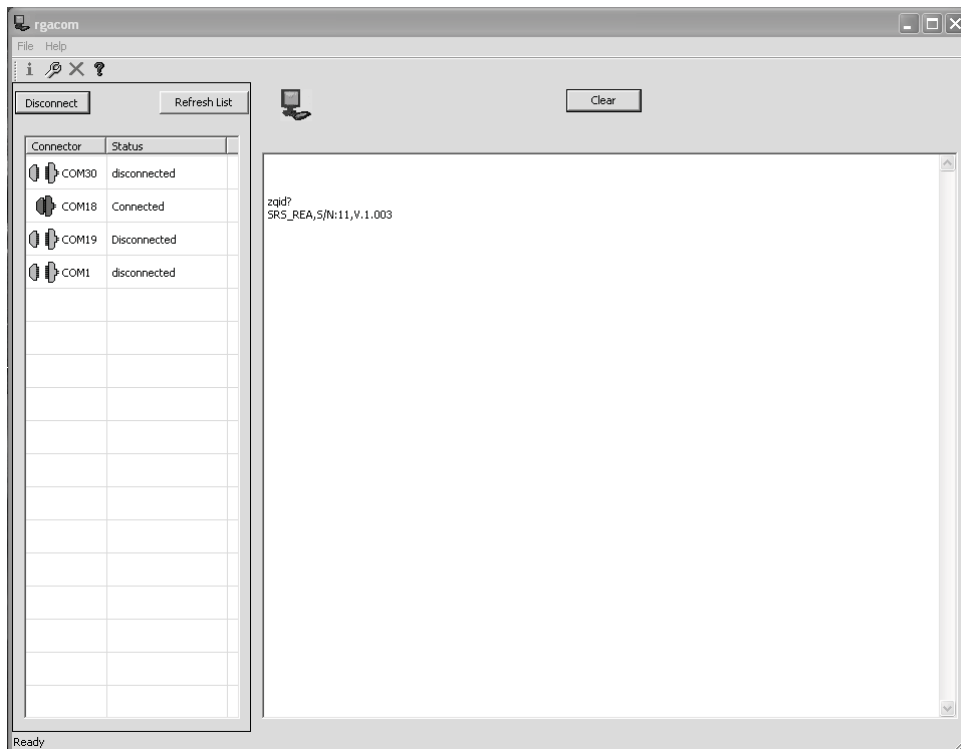


*Figure 5-1 Screenshot of rgacom.exe software.*

5.  Type 'zqid?' followed by the enter key.

6.  The REA will respond "SRS_REA, S/N:*******, V.1.009" or similar.

7.  To change the IP address, type 'zpip ###.###.###.###' and enter. For example zpip 192.137.7.12 and enter. # indicates a numeric character 0-9.

8.  To change the Subnet mask, type 'zpsm ###.###.###.###' and enter.

9.  To change the Gateway, type 'zpgw ###.###.###.###' and enter.

10. Type 'zpip? and enter to verify the IP address.

11. Type 'zpsm? and enter to verify the Subnet mask.

12. Type 'zpgw? and enter to verify the gateway address.

13. Check the values carefully. If they are not correct, re-enter the values.

14. To change the User Name, type 'zpnm@sss..s' (up to 15 alpha-numeric characters). For example zpnm@MYREA1 then enter. s indicates an alpha-numeric character.

15. To change the Password, type 'zppw@sss..s' (up to 15 alpha-numeric characters) and enter.

16. Type 'zpnm?' and enter to verify the new user name.

17. Type 'zppw?' and enter to verify the new password.

18. To change the Device Name, type 'zpdn@sss..s' (up to 15 alpha-numeric characters) and enter.

19. Type 'zpdn?' and enter to verify the new device name.

20. Select the connector again on the left side of the RGACOM window and click disconnect.

21. Your REA is ready to use. Use 'REASetupUtility' to test the configuration as described in Chapter 3.