



Installation and Operation Manual

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Note to all My Sine Users: We hope this Installation and Operation Manual is helpful. If you find any mistakes (spelling or otherwise), please send your comments to Support@PlusSine.com. For your significant contribution toward the improvement of this document, we will send you a Free Plus Sine T-shirt (while supplies last!).

1. Overview

My Sine is an easy-to-use computer based application that allows quick and easy programming of a Sine Systems RFC-1/B Remote Control. From a designated computer, My Sine allows you to keep a single site or multiple sites in one database.

Install My Sine on your computer (Windows 2000, XP, or Vista), and it communicates with the computer's modem to generate DTMF tones that are used to program the RFC 1/B. There are 2 modes of operation: Local (on site at the transmitter) and Remote (from a computer not at the transmitter site).

In the Local mode, you launch My Sine, go to the programming tab and click the button "enter the advanced programming mode". My Sine prompts you to press the "Push for Local Operation" button on the front of the RP-8. Then My Sine logs into your RFC 1/B and starts programming it. Note: In the Local mode, you connect a phone cable from the "line" port on your modem to the "phone" port on the RFC 1/B.

In the Remote mode, My Sine communicates with the modem in your computer and dials the site, logs in, and starts programming. Note: In the Remote mode, you connect a phone cable from the "line" port on your modem to the phone line that you want to use to dial the site for remote programming.

If your RFC 1/B is equipped with a serial adaptor, a software option will be available in the fall of 2008 enabling your My Sine to download your current settings (no additional charge for this option). Currently, you will need to create a new site database with My Sine. Note: to use this option in the future, you must have a serial adaptor (see SineSystems.com for information on purchasing the serial adaptor).

Note: This document provides information regarding the operation of My Sine. It is NOT the operation manual for the RFC 1/B, and does NOT provide detailed information about the programming of the RFC 1/B. For more information on the operation and programming of the RFC 1/B, please refer to the documentation provided with your purchase of the RFC 1/B. You can also download information from Sine Systems' website at www.SineSystems.com.

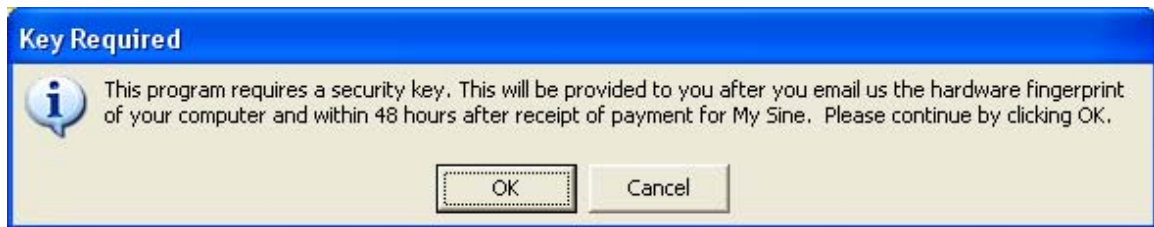
2. Installation

2. a. Installing My Sine On Your Computer (My Sine)

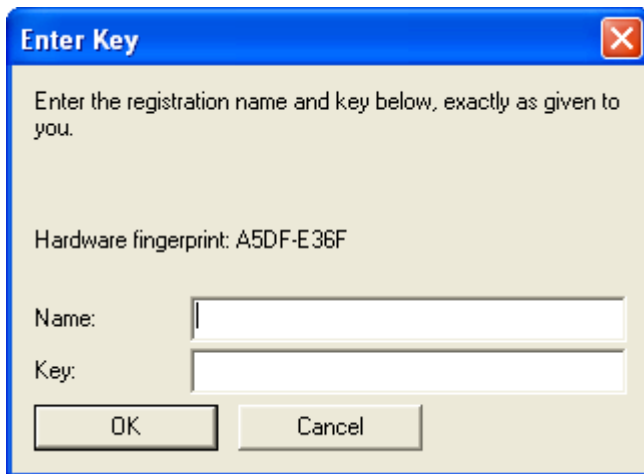
Note: If you are installing My Sine Pro, please skip to 2. b.

To download My Sine, go to www.plussine.com “Downloads” and create your account.

1. Save the file to your computer.
2. Run the downloaded program.
3. Close all open windows on your desktop.
4. Launch My Sine from the desktop Icon.
5. The first time you launch the program you will see:



6. Next, you will get a dialog box containing the hardware fingerprint of your computer.



Copy the “Hardware fingerprint” to send to Support@PlusSine.com as instructed below.

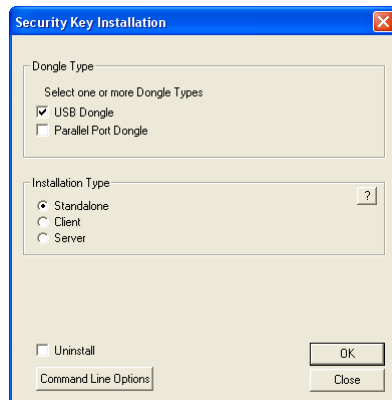
1. Please email the following information to Support@PlusSine.com

1. The name you want the product registered in
 2. The hardware fingerprint
 3. Your email address
2. If you have not already purchased a copy of My Sine, go to PlusSine.com, “Buy Now”.
3. You will receive your security key via email within 48 hours. After receiving it, re-launch My Sine and enter the name and the security key. Then the program will be unlocked.
4. Save your security key. If you ever have to reload the program, you will need the security key again.
5. My Sine will only run on the computer that matches the “Hardware Fingerprint”. If you want to move My Sine to another computer, you will need to deactivate your current copy. (Contact Support@PlusSine.com for further instructions regarding deactivation.)

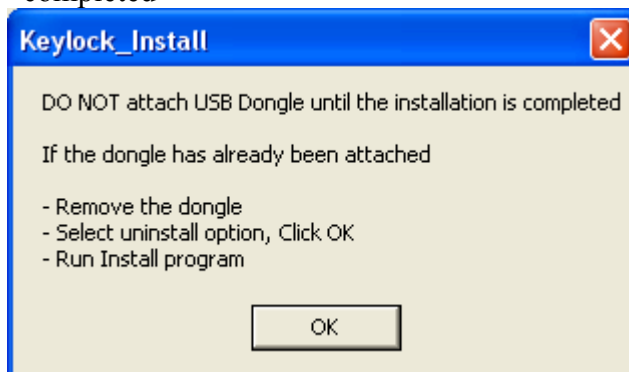
2. b. Installing My Sine Pro On Your Computer (KEY-LOK Installation)

To download My Sine, go to www.plussine.com “Downloads” and create your account.

1. Save the file to your computer.
2. Run the downloaded program.
3. Close all open windows on your desktop.
4. Launch My Sine Pro from the desktop Icon.
5. The first time you launch **My Sine Pro**, you will get a dialog box that will say, “No KEY-LOK or the wrong device is attached.” This is because the driver has not been installed for the Dongle. Under the My Sine Pro “HELP” menu, select “Install KEY-LOK Driver”



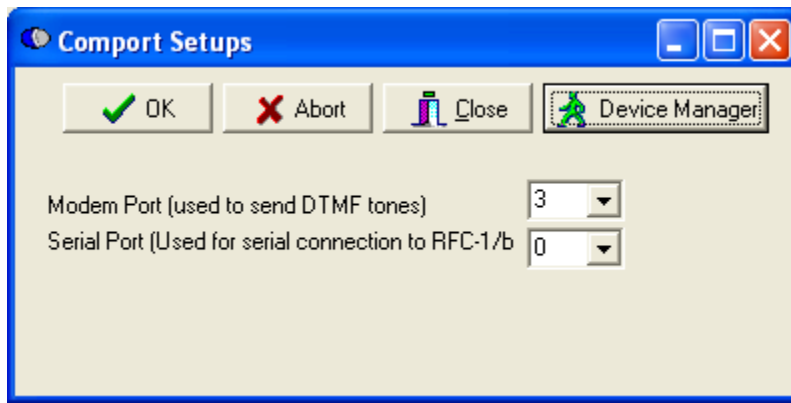
6. Select USB Dongle and Standalone
7. You will see a dialog box “DO NOT attach USB Dongle until installation is completed”



8. If you have installed the Dongle, remove it now.
9. At the lower right press “OK”
10. The next dialog box will say “The Dongle has been installed. Press ok and exit”
11. Install your Key-LOK Dongle in any USB port
12. Windows will install a driver for the Dongle

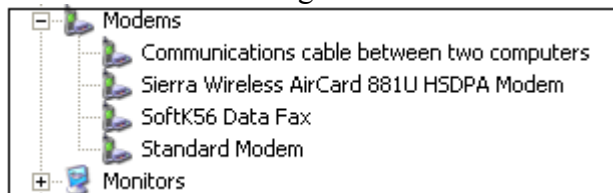
3. Modem and COM Port Setup

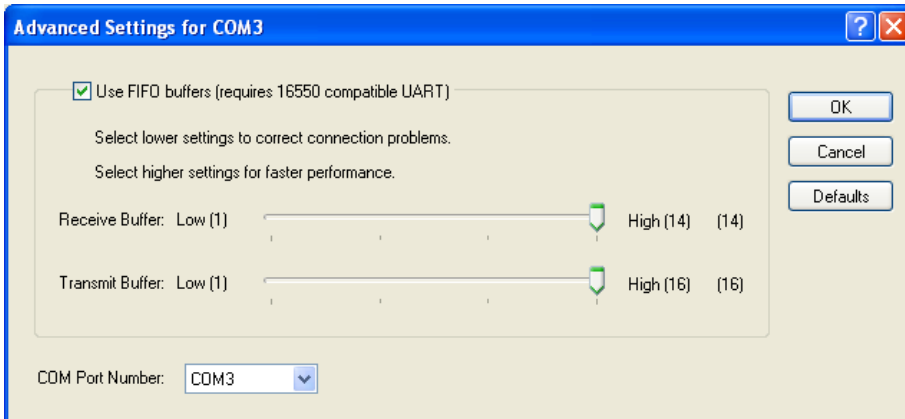
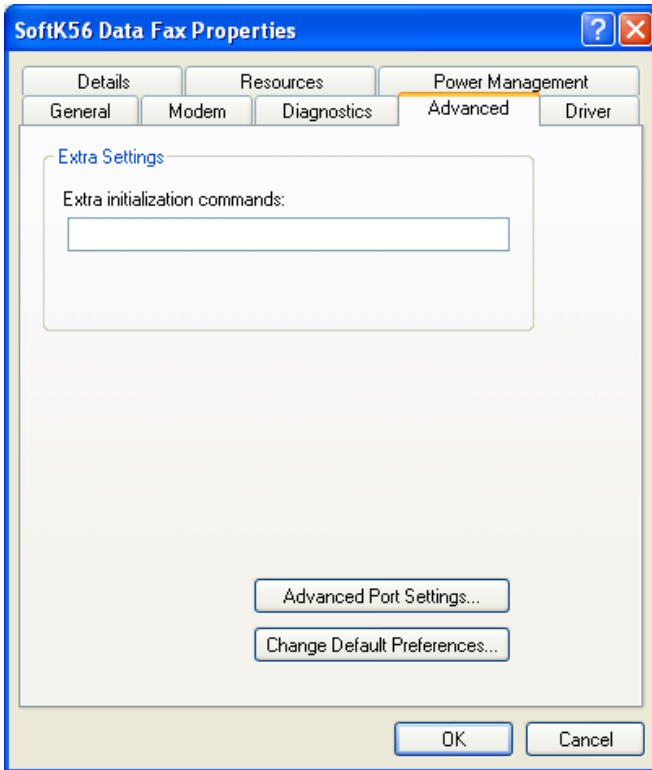
From the menu bar, select edit -> COM ports



If you are unsure of the COM port numbers that Windows has assigned to your devices, then click the “Device Manager” button to launch Windows Device Manager. Double click on the modem you want to use for My Sine to communicate with the RFC 1/B. Select the “Advanced” tab and click the “Advanced Port Settings” button at the bottom of the window. The COM port for your modem will be displayed at the bottom of the page. Close all windows related to Windows Device Manager and enter the number in the My Sine COM port Setups window. Click “OK” and exit the My Sine COM port Setups window.

Windows Device Manager





4. Database Navigation



Button Purpose



First

Sets the current record to the first record in the data set, disables the First and Prior buttons, and enables the Next and Last Buttons if they are disabled.



Prior

Sets the current record to the previous record and enables the Last and Next buttons if they are disabled.



Next

Sets the current record to the next record and enables the First and Prior buttons if they are disabled.



Last

Sets the current record to the last record in the data set, disables the Last and Next buttons, and enables the First and Prior Buttons if they are disabled.



Insert

Inserts a new record before the current record, and sets the data set into Insert and Edit modes.



Delete

Deletes the current record and makes the next record the current record.



Edit

Puts the data set into Edit mode so that the current record can be modified.



Post

Writes changes in the current record to the database.



Cancel

Cancels edits to the current record, restores the record display to its condition prior to editing, and turns off Insert and Edit Modes if they are active.

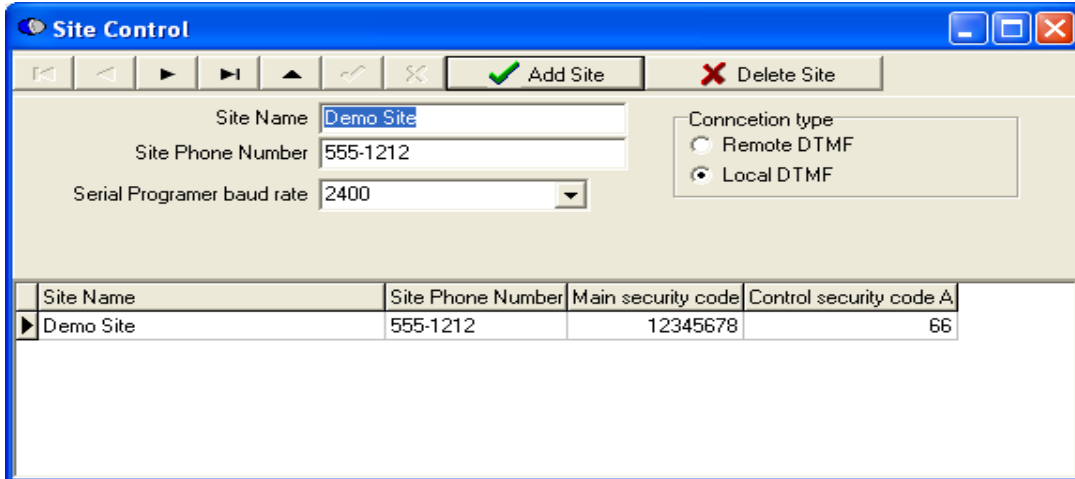


Refresh

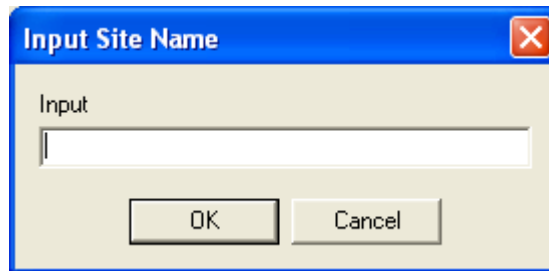
Refreshes the buffered data in the associated data set.

5. Creating New Site

1. Select Edit -> Edit or Add New Site

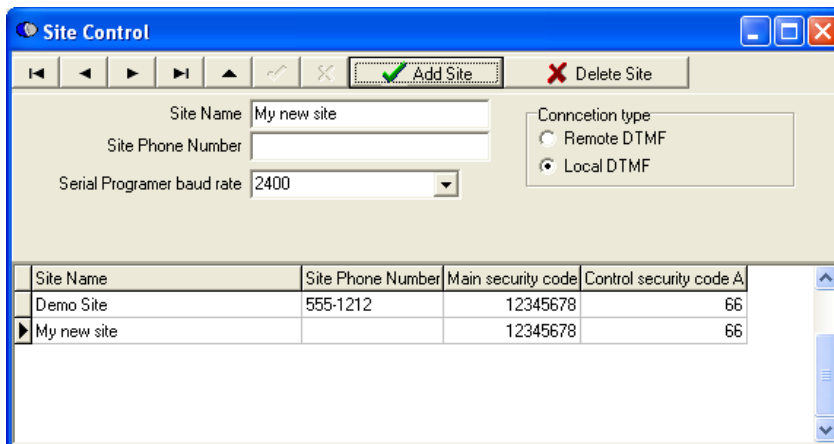


2. Press "Add Site"



3. Press "Yes"

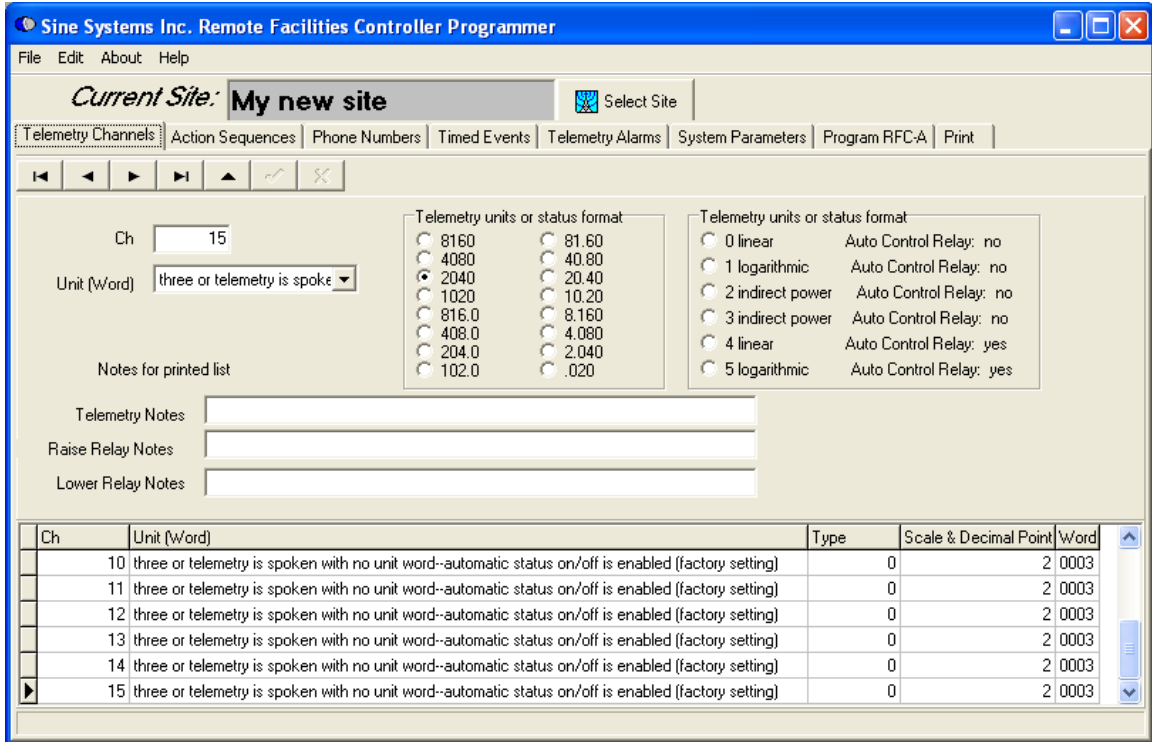
Input the name for your site



4. Input the Site Phone Number and select Connection type
5. Close the Site Control window. My Sine will create a blank database with the factory defaults.

6. Programming

6. a. Telemetry Channels



Ch. The channel number is the physical telemetry input channel.

Unit (Word) The word to be spoken by the RFC 1/B.

To find a word you can either use the drop down list box or start typing the word.
Telemetry units or status format (refer to the RFC 1/B documentation)

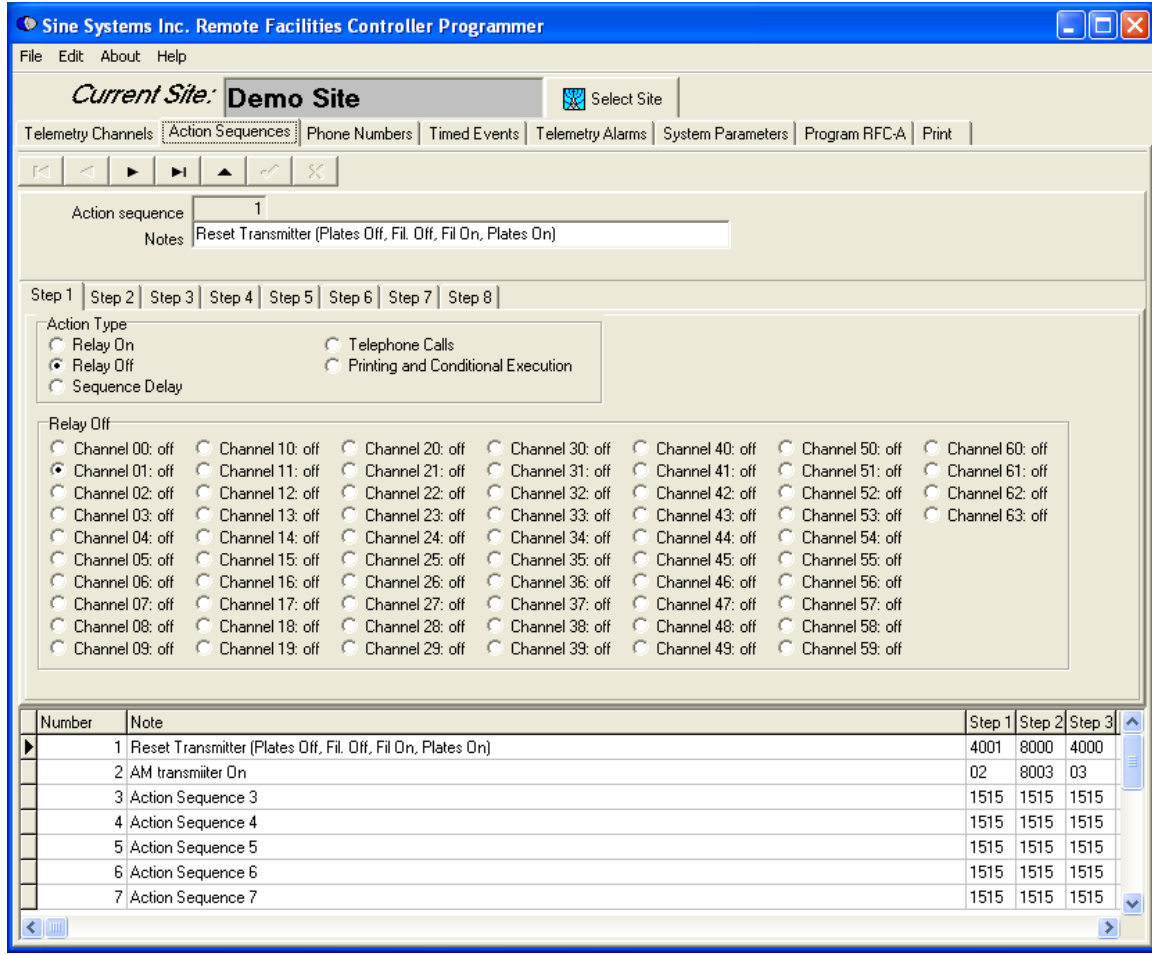
“Notes for printed list” is used to print out a quick reference guide for dialing, logging in, and controlling the RFC 1/B. Not only will the information below be printed for every channel, but also instructions for dialing, logging in, and controlling the RFC 1/B will be printed.

Telemetry Notes (i.e. Main Transmitter Forward Power)

Raise Relay Notes (i.e. Main Transmitter Plates On)

Lower Relay Notes (i.e. Main Transmitter Plates Off)

6. b. Action Sequence Programming



The RFC 1/B can be programmed to function automatically in response to the telemetry conditions or to the time and date. These automatic functions rely on action sequences (series of instructions stored in memory to perform a specific task or set of tasks). Action sequences can manipulate the control relays of the RFC 1/B, place telephone calls, print readings, etc. A typical action sequence might be to activate a relay, pause, and then activate another relay. Such a sequence could be used to turn on a transmitter. An action sequence is of little use by itself. It is merely a set of instructions to perform a task (like a macro in a computer application). The action sequence must be activated or triggered to perform its task. When combined with a date/time trigger or an alarm trigger, an action sequence gives the RFC 1/B the ability to function automatically.

- An action sequence is a stored set of instructions that perform a task when activated.
- An action sequence must be triggered by an alarm or the clock/calendar to function.

The RFC 1/B can store up to eight action sequences each having as many as eight steps. My Sine places each step on a separate tab.

The available instructions:

- **Relay On**
- **Relay Off**
- **Sequence Delay**
- **Telephone Calls**
- **Printing and Conditional Execution**

Relay On and Off

Step 1 | Step 2 | Step 3 | Step 4 | Step 5 | Step 6 | Step 7 | Step 8

Action Type

Relay On Telephone Calls
 Relay Off Printing and Conditional Execution
 Sequence Delay

Relay On

Channel 00: on Channel 10: on Channel 20: on Channel 30: on Channel 40: on Channel 50: on Channel 60: on
 Channel 01: on Channel 11: on Channel 21: on Channel 31: on Channel 41: on Channel 51: on Channel 61: on
 Channel 02: on Channel 12: on Channel 22: on Channel 32: on Channel 42: on Channel 52: on Channel 62: on
 Channel 03: on Channel 13: on Channel 23: on Channel 33: on Channel 43: on Channel 53: on Channel 63: on
 Channel 04: on Channel 14: on Channel 24: on Channel 34: on Channel 44: on Channel 54: on
 Channel 05: on Channel 15: on Channel 25: on Channel 35: on Channel 45: on Channel 55: on
 Channel 06: on Channel 16: on Channel 26: on Channel 36: on Channel 46: on Channel 56: on
 Channel 07: on Channel 17: on Channel 27: on Channel 37: on Channel 47: on Channel 57: on
 Channel 08: on Channel 18: on Channel 28: on Channel 38: on Channel 48: on Channel 58: on
 Channel 09: on Channel 19: on Channel 29: on Channel 39: on Channel 49: on Channel 59: on

The RFC 1/B can operate any of the control relays as a step in an action sequence.

Sequence Delay

Action sequence: 1
Notes: Reset Transmitter (Plates Off, Fil. Off, Fil On, Plates On)

Step 1 | Step 2 | Step 3 | Step 4 | Step 5 | Step 6 | Step 7 | Step 8

Action Type

Relay On Telephone Calls
 Relay Off Printing and Conditional Execution
 Sequence Delay

Sequence delay

1 second
 2 seconds
 5 seconds
 10 seconds
 20 seconds
 40 seconds
 80 seconds

The RFC 1/B pauses for about one half second between the steps of an action sequence with the factory settings. This can be adjusted by changing the action sequence delay or by placing a delay instruction in the action sequence. Select an appropriate delay for the required event. Longer delays can be achieved by placing two or more delay commands in adjacent action sequence steps.

Telephone Calls

The screenshot shows a configuration window for 'Telephone Calls'. At the top, there is a navigation bar with tabs for Step 1 through Step 8. Below this, the 'Action Type' section contains four radio buttons: 'Relay On', 'Relay Off', 'Sequence Delay', and 'Telephone Calls'. The 'Telephone Calls' option is selected and highlighted with a dashed border. Below the 'Action Type' section is the 'Telephone Calls' section, which contains eight radio button options: 'Call all telephone numbers in rotation A, B, C, D, E, F, A, B, etc.', 'Call all telephone numbers in weighted rotation A, B, A, C, A, D, A, E, A, F, A, B, etc.', 'Call telephone number A one time', 'Call telephone number B one time', 'Call telephone number C one time', 'Call telephone number D one time', 'Call telephone number E one time', and 'Call telephone number F one time'.

The RFC 1/B can place one or more telephone calls as a step in an action sequence. The message that is delivered will depend on whether the action sequence is triggered by telemetry conditions or by the clock/calendar. Select an instruction from the list to generate telephone calls.

Printing and Conditional Execution

The screenshot shows a configuration window for 'Printing and Conditional Execution'. At the top, there is a navigation bar with tabs for Step 1 through Step 8. Below this, the 'Action Type' section contains four radio buttons: 'Relay On', 'Relay Off', 'Sequence Delay', and 'Printing and Conditional Execution'. The 'Printing and Conditional Execution' option is selected and highlighted with a dashed border. Below the 'Action Type' section is the 'Printing Readings and Conditional Execution' section, which contains three radio button options: 'Print telemetry readings to a local printer.', 'Print telemetry readings to a remote printer.', and 'Stop execution and recheck telemetry.'

The RFC 1/B can print readings to a printer as a step in an action sequence. The printer can be a local printer that is connected directly to the RFC 1/B through a PA-1 Parallel Printer Adapter or an RS-232 Serial Data Adapter. Or, the printer can be a remote printer that can be contacted by the RFC 1/B through an MA-1 Modem Adapter.

Conditional Execution

There are no instructions in the RFC 1/B action sequences for looping or decision trees. There are some instructions that can be used to perform conditional execution in an action sequence. See the RFC 1/B documentation for more information

6. c. Phone Numbers

Description	Phone Number	Call Attempts	Dialing Mode
▶ Bob's Cell Phone	662 555 1212	3	0
Description for B		3	1
Description for C		3	0
Description for D		3	0
Description for E		3	0
Description for F		3	0

Warning

Incorrect communications settings can cause the RFC 1/B to place repeated, unwanted calls to unsuspecting people or places. It is solely your responsibility to verify that the RFC 1/B is programmed to contact only authorized personnel.

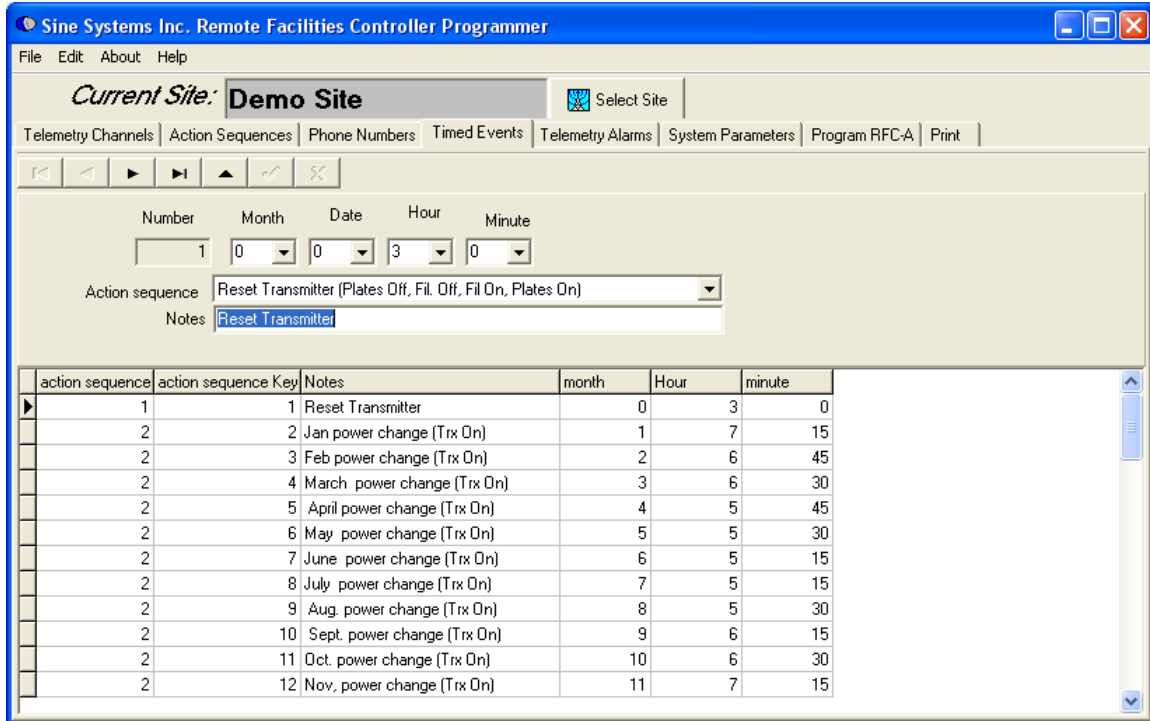
Programming Telephone Numbers

The memory areas for the six telephone numbers are designated as Telephone Number A-F. Each telephone number can contain up to twelve digits. Telephone numbers cannot be chained together for more digits in one number. It is not necessary to use all the numbers or all the digits in a number. In addition to the 12 digits, each telephone number in the RFC 1/B can be programmed with a dialing mode and a number of attempts. There are fourteen memory locations available for each telephone number.

Setting Call Attempts

You may want to make more attempts to connect to a voice number that is likely to be busy than to a pager number. Each telephone number has an individually assigned value for call attempts. Call attempts can be set from 1 to 4. Programming a value greater than 4 will result in only 4 call attempts. The factory default value is 3 attempts.

6. d. Timed Events Tab



Programming a Time Trigger

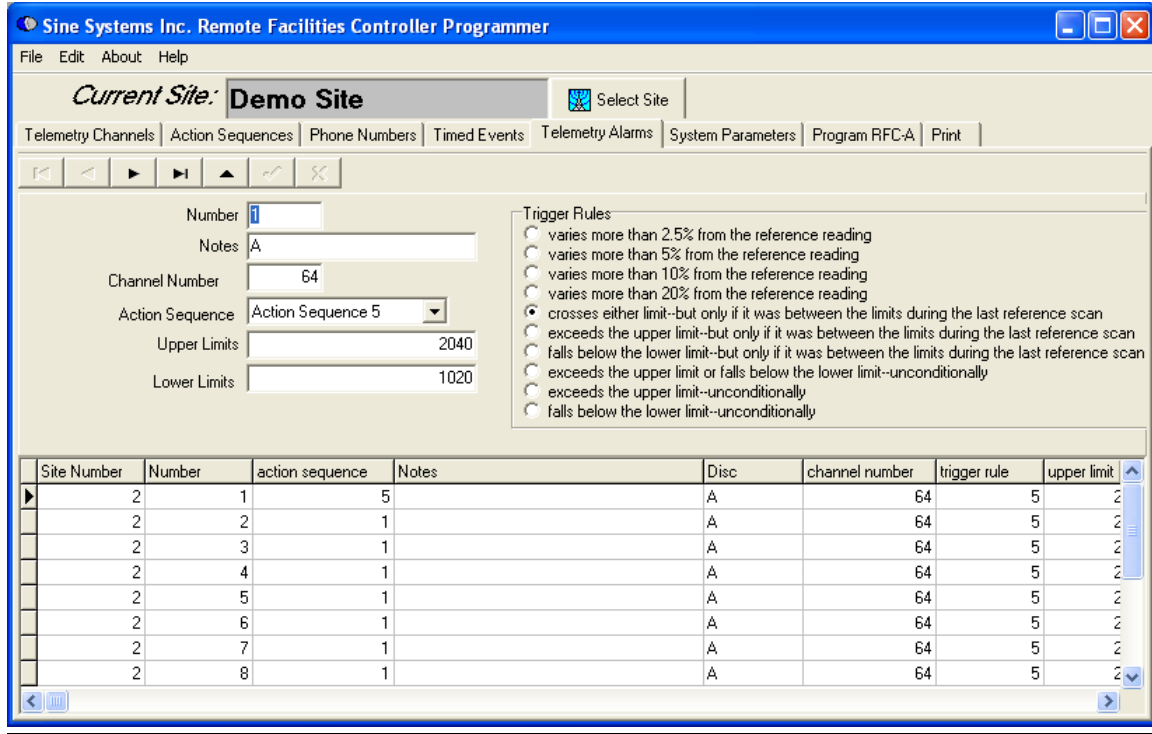
Date/time triggers rely on action sequence programming that is discussed previously. Using a date/time trigger, an action sequence can be activated on a specific month, date, hour and minute. Global match entries allow a single date/time trigger to operate repeatedly every month, date or hour.

The Following is required to activate a Time Trigger.

- the Action Sequence to trigger
- the Month in which to trigger
- the Date on which to trigger
- the Hour at which to trigger
- the Minute at which to trigger

Select the action sequence from the drop down menu. Program a month, date, hour and minute. The month, date, and hour can all be programmed with a global match value that will make the date time trigger on any value. For instance, program the month to 15 and the date/time will trigger every month. Program the month to 15 and the date to 1515 and the date/time will trigger every day of every month. Program the month to 5 and the date to 1515 and the hour to 19 and the action sequence will trigger every day of May at 7:00pm. Program all of these with 15 and the action sequence will trigger every hour of every day of every month. There is no global match for the minute.

6. e. Telemetry Alarms



The RFC 1/B can be programmed to function automatically in response to the telemetry conditions (alarms) or the date and time (via the internal clock/calendar). This section describes how to have the RFC 1/B function automatically using alarms, date/time triggers and action sequences. Alarms and date/time triggers call upon action sequences--programmed series of instructions--to do the real work.

Telemetry Alarm Programming

There are eight alarms in the RFC 1/B that can monitor a telemetry channel for abnormal conditions. They are designated Alarm A - H. A telemetry channel is assigned to an alarm in user adjustable programming. In basic operation with the factory settings, the RFC 1/B will call up to three telephone numbers to report the condition, but it does not attempt to correct the situation. With a little extra programming the RFC 1/B can be configured to take corrective action. Each telemetry alarm in the RFC 1/B must be programmed with a channel number, upper and lower telemetry limits, an action sequence to trigger and a trigger rule.

- the telemetry channel to monitor
- the trigger rule for the alarm
- the name of the action sequence that is triggered
- upper and lower limits of four digits each

Each alarm can monitor only one telemetry channel, but a telemetry channel can be monitored by more than one alarm. This is useful for monitoring power output where at one set of limits you want the RFC 1/B to take corrective action and at another set of

limits you want it to alert an operator.

Channel Number

The channel number is the physical telemetry input channel that is monitored by the alarm. Telemetry channels range from 00 to 63. An unused alarm should be programmed with an alarm channel of 64. This is an indication to the system that this alarm is not used since there is no channel 64.

Trigger Rules

The trigger rule determines the conditions that the alarm triggers, such as exceeding limits, etc. The rules listed below are the ten trigger rules.

- 1 varies more than 2.5% from the reference reading
- 2 varies more than 5% from the reference reading
- 3 varies more than 10% from the reference reading
- 4 varies more than 20% from the reference reading
- 5 crosses either limit--but only if it was between the limits during the last reference scan
- 6 exceeds the upper limit--but only if it was between the limits during the last reference scan
- 7 falls below the lower limit--but only if it was between the limits during the last reference scan
- 8 exceeds the upper limit or falls below the lower limit--unconditionally
- 9 exceeds the upper limit--unconditionally
- 10 falls below the lower limit--unconditionally

Trigger rules 1 through 4 do not consider the upper or lower limits. The limits can be programmed to any value when any of these four trigger rules are used. No alarm is triggered if you use the RFC 1/B to set a piece of equipment into a condition that exceeds the tolerance of the trigger rule.

Trigger rules 5 through 7 are used most of the time. They allow you to set specific upper and lower limits, and they also allow you to use the RFC 1/B to set a piece of equipment into a condition that exceeds these limits without triggering an alarm.

Use trigger rules 8-10 carefully. They can cause the RFC 1/B to trigger an alarm continuously because they do not consider that the RFC 1/B may be used to set a piece of equipment into an alarm condition (such as shutting down a transmitter).

7. System Parameters

7. a. Communications

Sine Systems Inc. Remote Facilities Controller Programmer

File Edit About Help

Current Site: **Demo Site**

Telemetry Channels | Action Sequences | Phone Numbers | Timed Events | Telemetry Alarms | **System Parameters** | Program RFC-A | Print

Communications | System | Telemetry Default Setup | Security Codes

Answer on ring (1001)

Communication Mode (1002)

- Answer in voice mode only (factory default)
- Answer in serial data mode first-if no connection is made within 10 seconds, try voice mode
- Answer in voice mode first-if no DTMF is received within 10 seconds, try data mode
- Answer in serial data mode only

Alarm Call Message Duration (1003)

<input type="radio"/> 10 seconds	<input type="radio"/> 40 seconds	<input type="radio"/> 80 seconds	<input type="radio"/> 120 seconds
<input type="radio"/> 10 seconds	<input type="radio"/> 50 seconds	<input type="radio"/> 90 seconds	<input type="radio"/> 130 seconds
<input type="radio"/> 20 seconds	<input checked="" type="radio"/> 60 seconds	<input type="radio"/> 100 seconds	<input type="radio"/> 140 seconds
<input type="radio"/> 30 seconds	<input type="radio"/> 70 seconds	<input type="radio"/> 110 seconds	<input type="radio"/> 150 seconds

Alarm Call Pause Duration (1004)

<input type="radio"/> 10 seconds	<input type="radio"/> 40 seconds	<input type="radio"/> 80 seconds	<input type="radio"/> 120 seconds
<input type="radio"/> 10 seconds	<input type="radio"/> 50 seconds	<input type="radio"/> 90 seconds	<input type="radio"/> 130 seconds
<input type="radio"/> 20 seconds	<input checked="" type="radio"/> 60 seconds	<input type="radio"/> 100 seconds	<input type="radio"/> 140 seconds
<input type="radio"/> 30 seconds	<input type="radio"/> 70 seconds	<input type="radio"/> 110 seconds	<input type="radio"/> 150 seconds

Communication Speed (baud) (1005)

<input type="radio"/> 9600	<input checked="" type="radio"/> 2400	<input type="radio"/> 600	<input type="radio"/> 150
<input type="radio"/> 4800	<input type="radio"/> 1200	<input type="radio"/> 300	<input type="radio"/> 75

Using a Cellular Telephone-ring sensitivity (1014)

<input checked="" type="radio"/> Ring sensitivity = 10 "Port Off" (maximum)	<input type="radio"/> Ring sensitivity = 1.27 "Port Off"	<input type="radio"/> Ring sensitivity = 1.79 "Port On"
<input type="radio"/> Ring sensitivity = 4.66 "Port Off"	<input type="radio"/> Ring sensitivity = 1.11 "Port Off" (minimum)	<input type="radio"/> Ring sensitivity = 1.48 "Port On"
<input type="radio"/> Ring sensitivity = 3.04 "Port Off"	<input type="radio"/> Ring sensitivity = 10 "Port On" (maximum)	<input type="radio"/> Ring sensitivity = 1.27 "Port On"
<input type="radio"/> Ring sensitivity = 2.25 "Port Off"	<input type="radio"/> Ring sensitivity = 4.66 "Port On"	<input type="radio"/> Ring sensitivity = 1.11 "Port On" (minimum)
<input type="radio"/> Ring sensitivity = 1.79 "Port Off"	<input type="radio"/> Ring sensitivity = 3.04 "Port On"	
<input type="radio"/> Ring sensitivity = 1.48 "Port Off"	<input type="radio"/> Ring sensitivity = 2.25 "Port On"	


Incorrect Code Lockout/Communications Mode Switch Delay (1016)

<input type="radio"/> 0 seconds	<input type="radio"/> 40 seconds	<input type="radio"/> 80 seconds	<input type="radio"/> 120 seconds
<input checked="" type="radio"/> 10 seconds	<input type="radio"/> 50 seconds	<input type="radio"/> 90 seconds	<input type="radio"/> 130 seconds
<input type="radio"/> 20 seconds	<input type="radio"/> 60 seconds	<input type="radio"/> 100 seconds	<input type="radio"/> 140 seconds
<input type="radio"/> 30 seconds	<input type="radio"/> 70 seconds	<input type="radio"/> 110 seconds	<input type="radio"/> 150 seconds

7. b. System

Sine Systems Inc. Remote Facilities Controller Programmer

File Edit About Help

Current Site: **Demo Site**  Select Site

Telemetry Channels | Action Sequences | Phone Numbers | Timed Events | Telemetry Alarms | System Parameters | Program RFC-A | Print

Communications | System | Telemetry Default Setup | Security Codes

Hardware version (0996)

Tone/Pulse Dialing (0999)
 Pulse dialing DTMF dialing

Idle system timeout (1000)

<input type="radio"/> 30 seconds	<input type="radio"/> 8.5 minutes	<input type="radio"/> 32.5 minutes	<input type="radio"/> 72.5 minutes
<input type="radio"/> 60 seconds	<input type="radio"/> 13 minutes	<input type="radio"/> 41 minutes	<input type="radio"/> 85 minutes
<input checked="" type="radio"/> 2.5 minutes	<input type="radio"/> 18.5 minutes	<input type="radio"/> 50.5 minutes	<input type="radio"/> 98.5 minutes
<input type="radio"/> 5 minutes	<input type="radio"/> 25 minutes	<input type="radio"/> 61 minutes	<input type="radio"/> 113 minutes

Relay (minimum) operate time (1006)

<input type="radio"/> 0.3 second	<input type="radio"/> 1.5 seconds	<input type="radio"/> 2.7 seconds	<input type="radio"/> 3.9 seconds
<input type="radio"/> 0.6 seconds *	<input checked="" type="radio"/> 1.8 seconds	<input type="radio"/> 3.0 seconds	<input type="radio"/> 4.2 seconds
<input type="radio"/> 0.9 seconds	<input type="radio"/> 2.1 seconds	<input type="radio"/> 3.3 seconds	<input type="radio"/> 4.5 seconds
<input type="radio"/> 1.2 seconds	<input type="radio"/> 2.4 seconds	<input type="radio"/> 3.6 seconds	<input type="radio"/> 4.8 seconds

Action sequence step delay (1007)

<input type="radio"/> 0.2 seconds	<input type="radio"/> 1.0 seconds	<input type="radio"/> 1.8 seconds	<input type="radio"/> 2.6 seconds
<input type="radio"/> 0.4 seconds	<input type="radio"/> 1.2 seconds	<input type="radio"/> 2.0 seconds	<input type="radio"/> 2.8 seconds
<input type="radio"/> 0.6 seconds	<input type="radio"/> 1.4 seconds	<input type="radio"/> 2.2 seconds	<input type="radio"/> 3.0 seconds
<input type="radio"/> 0.8 seconds	<input type="radio"/> 1.6 seconds	<input type="radio"/> 2.4 seconds	<input type="radio"/> 3.2 seconds

Power-up action sequence (1008)

Autoscan stop channel (1010)

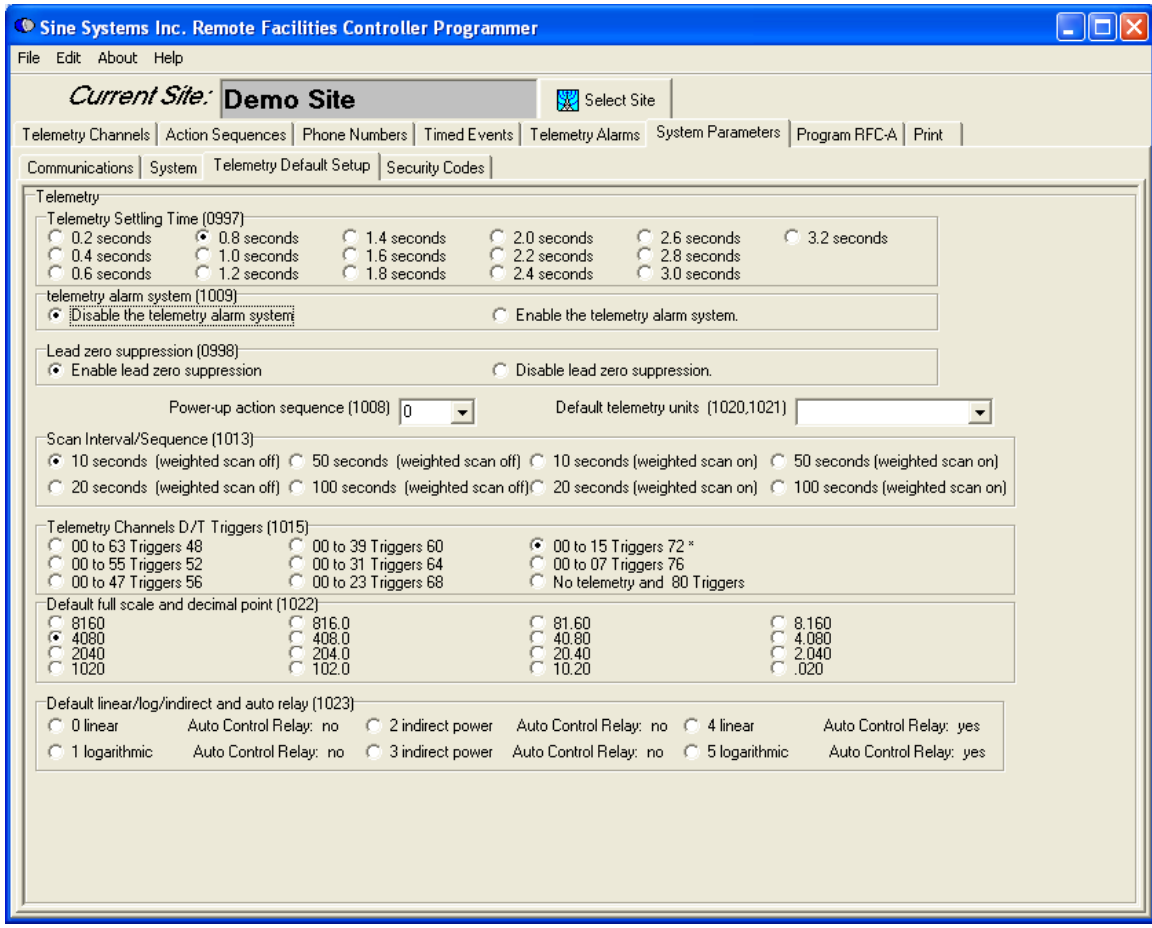
Clock speed adjustment (1018,1019)

See RFC-1A documentation for details (6.6.6)

Site ID

	Word	Value
Site ID phrase: word 1	This is	0711
Site ID phrase: word 2	R	0908
Site ID phrase: word 3	F	0812
Site ID phrase: word 4	C	0809
Site ID phrase: word 5	one	0001
Site ID phrase: word 6	B	0808

7. c. Telemetry Default Setup



Alarm Call Message Duration

During voice mode alarm calls, the RFC 1/B will repeat the site identification phrase and the cause of the alarm for a predetermined period of time. This period of time, the call message duration, is adjustable in programming.

Alarm Call Pause Duration

During voice mode alarm calls, the RFC 1/B will pause between multiple calls for a predetermined period of time. This period of time, the call pause duration, is adjustable in programming from 10 to 150 seconds.

Using a Cellular Telephone--ring sensitivity

It is possible to connect a cellular telephone to the RFC 1/B in place of a telephone line for both dial in and out capabilities. Some cell phone manufacturers offer devices that provide a cellular telephone with a standard RJ-11 jack. These devices emulate a standard telephone line including dial tone, ring voltage and battery. Most of these RJ-11 adapters generate a square-wave ring signal on an incoming call instead of the sine-wave ring voltage that is found on a normal telephone line. Additionally, the RFC 1/B is factory programmed to dial out using pulse mode dialing instead of DTMF tones. Some adapters

will recognize pulse dialing, or the RFC 1/B can dial out using internally stored, “imprecise” DTMF tones. See the setting for tone/pulse for more information. The RFC 1/B has a firmware ring sensitivity adjustment that will enable it to recognize the non-standard ring signal of a cell phone. We suggest a value of 8 when using an RJ-11 adapter. (Be careful when selecting a value--the list is not in numerical order.)

Dedicated Control Port

Hardware setup for the Dedicated Control Port is covered in the Installation section of this documentation.

Another use for the local phone jack on the RFC 1/B is as a port for a dedicated communications link. This could be a radio link, a dedicated line, or any system that will transmit voice-grade audio in both directions. Operation in this mode is exactly the same as operation from the local telephone. DTMF tones are used to control the RFC 1/B and it speaks back. The dedicated control port does not eliminate the dial-up capabilities of the RFC 1/B, but only one connection can be active at a time. The dedicated control port will be disabled during a remote call. The dedicated control port shares a memory location with the ring sensitivity adjustment. Using the table found in the RFC 1/B documentation, program the value from column V1 at memory address 1014 to enable the dedicated control port. If you intend to maintain dial-up capability, choose the appropriate ring sensitivity value when you enable the dedicated control port. 1 is equivalent to the factory programmed ring sensitivity but with the dedicated control port enabled. To enable the dedicated control ports and use a cell phone adapter for dial-up capability (as described in the previous section), we suggest 9.

Communications Mode--voice/data

Using optional adapters, the RFC 1/B can connect to a data terminal or a remote computer. Data mode can be used in addition to or in place of DTMF/voice communications. Operation and commands in data mode are exactly the same as from DTMF/voice mode. The RFC 1/B enables only the voice mode or the data mode at any given moment. Both voice and data modes can be used but not simultaneously. Set which communications mode the RFC 1/B uses first to connect to an incoming call.

0 Answer in voice mode only (factory default)

1 Answer in serial data mode first--if no connection is made within 10 seconds, try voice mode

2 Answer in voice mode first--if no DTMF is received within 10 seconds, try data mode

3 Answer in serial data mode only

In communications mode 1 and 2, incorrect security code lockout time is also used to determine the length of time that the RFC 1/B will wait to connect before switching to the alternate communications mode. We suggest setting this to 10 seconds when mode 1 or 2 is used. See the security codes section for more information. RFC 1/B Advanced Operation page 6.24 with factory settings, the RFC 1/B communicates at 2400 baud with 8 data bits, 1 stop bit and no parity. Communications speed is adjustable from 75 to 9600 baud. Protocol is fixed at 8, N, 1.

Forced Serial Mode/Data Dump

For testing purposes, the RFC 1/B can be forced to shift from voice mode to data mode from the local phone. Issue the command 84 from normal operating mode. The RFC 1/B will respond with “enter one digit command”.

- enter 0 to force the communications mode to data mode immediately
- enter 1 to perform a data dump--all 1024 memory locations are copied to the data port in a tabular format
- enter * to abort this command

Other Commands and Options

This section contains information on commands and features that do not fall into any of the major topics that have been covered elsewhere.

Site Identification Phrase

This is the phrase that the RFC 1/B uses to identify itself when it comes online and when it reports an alarm. It is factory set to "This is RFC 1/B", but it can be programmed with any six words from the word table.

Hardware Version and Pulse Hang-up Detection

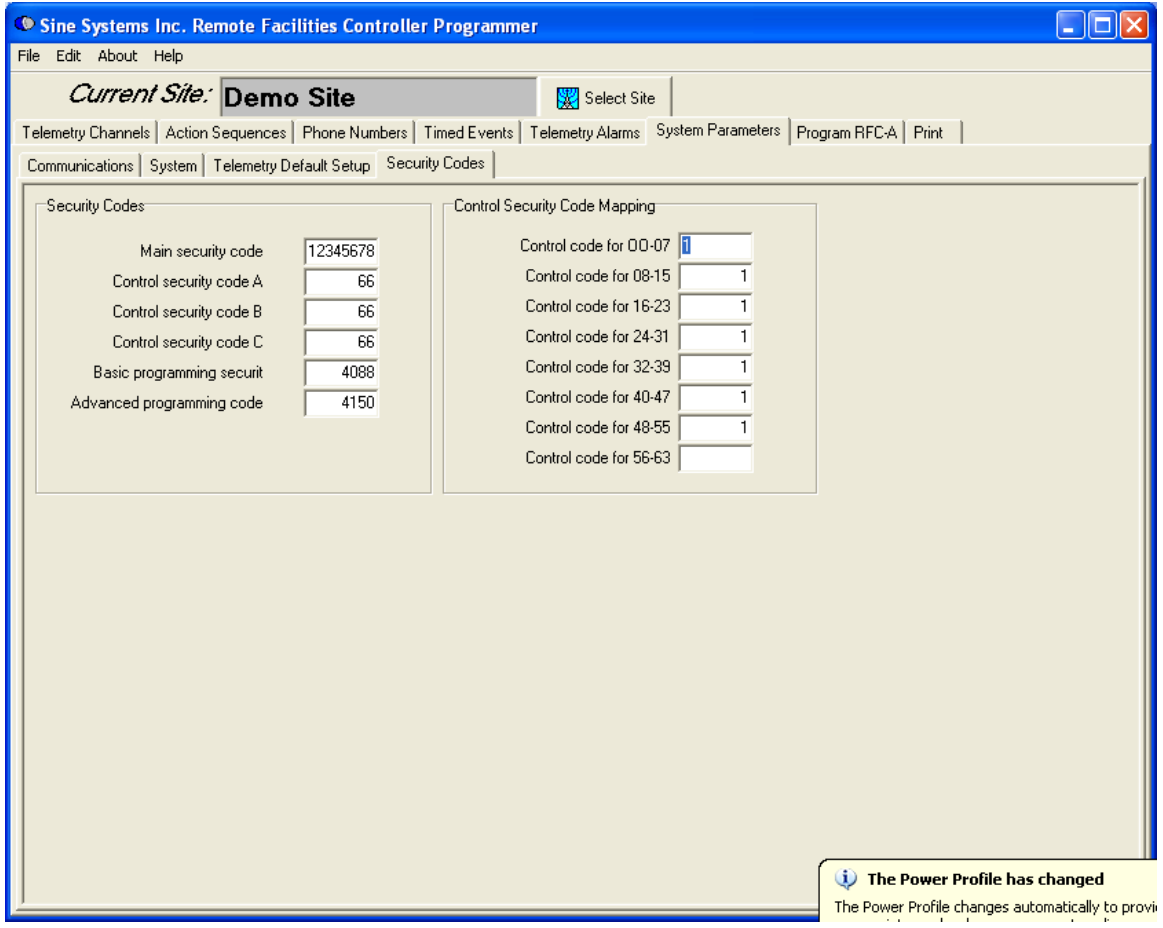
The setting stores an indicator to the system when a firmware upgrade is installed in early hardware revisions. If the value is incorrectly programmed, the RFC 1/B will seize the telephone line and you will not be able to dial into the system. Do not change this value unless you are absolutely certain that it is required for your installation.

RFC 1/B main board revisions 1.05 and earlier use a prepackaged telephone line interface module labeled “XECOM”. When the firmware in these early board revisions is updated to firmware version 4.0 or greater, the firmware must be adjusted to recognize this type of telephone interface. Since this adjustment alters the behavior of the telephone interface, it should only be made from the local phone attached directly to the RFC 1/B. This adjustment also provides a means to disable the pulse hang-up detector in the RFC 1/B. The pulse hang-up detector is responsible for determining when the RFC 1/B has lost the telephone line unexpectedly. With the detector disabled, the RFC 1/B will not respond to a lost telephone line. It will remain in operating mode until the hang-up timer expires--2.5 minutes with factory programming. The pulse hang-up detector should only be disabled in situations where the RFC 1/B is receiving false pulses and dropping the connection at inappropriate times on a recurring basis.

Idle System Timeout

As a precautionary measure, the RFC 1/B will go offline after a predetermined period of inactivity (no DTMF tones). This period of time is adjustable through programming.

7. d. Security Codes



Security Codes

Most of the security code information is discussed in the basic operation section of the documentation provided with your RFC 1/B..

Security Code Programming

The main security code can be up to eight digits long. All other codes can be up to four digits long. Program a single digit into each memory location. A code will be disabled if it is filled entirely with blanks.

Control Security Code Mapping

The basic operation documentation would lead you to believe that there is one control security code in the RFC 1/B. One is all that is required for most installations, but there are actually three control security codes. Each block of control channels can be programmed with one of the three codes. (See the installation section of the RFC 1/B documentation for clarification of channel blocks.) This allows you to wire system critical functions to one relay panel and non-critical functions to another panel and protect each set of control relays with a different code. Personnel can be given the appropriate control code(s) for the functions that they are authorized to use. All

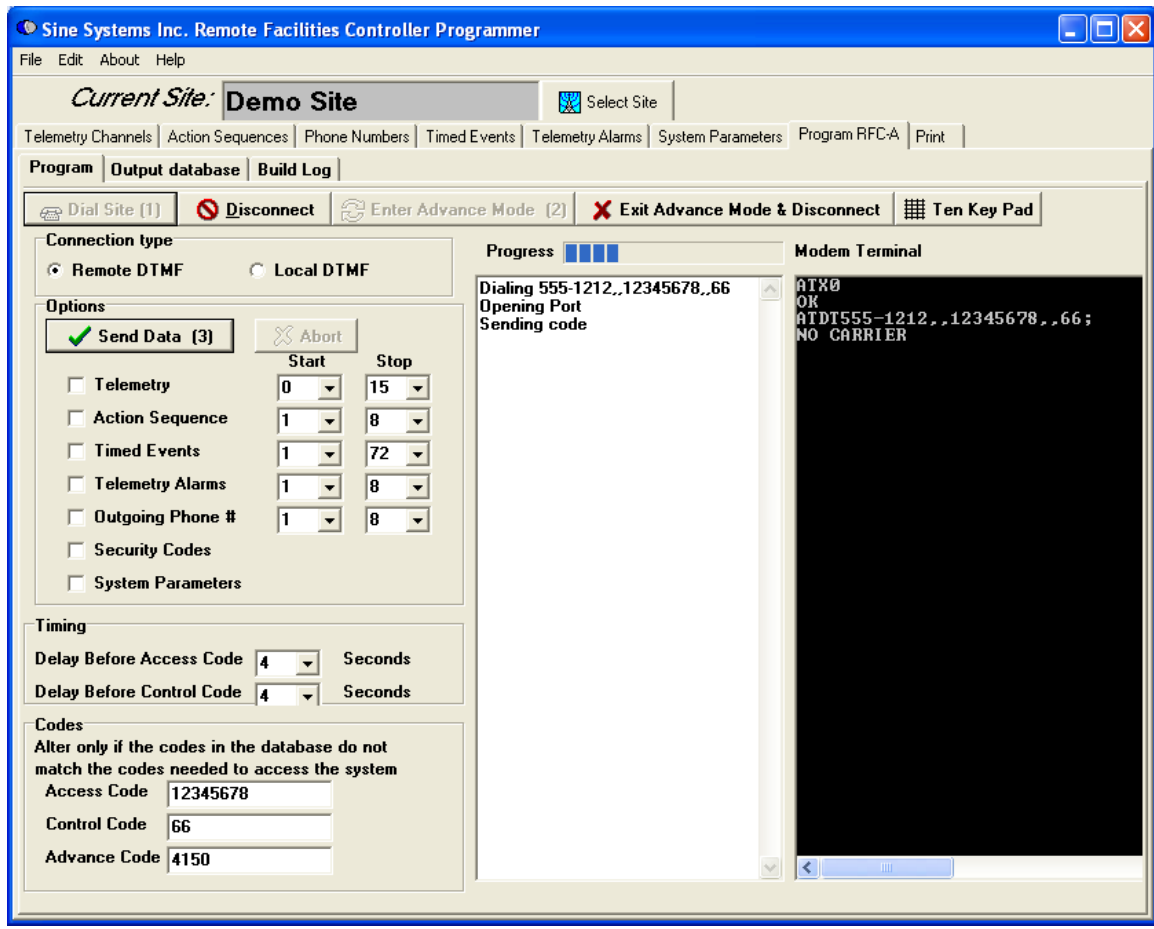
authorized personnel can take readings on all channels without having control authorization on all channels.

All 64 channels are assigned the control security code A in the factory settings. This code is factory set to 66. However, each block of eight channels can be assigned any of the three control security codes. Each of these eight addresses can store a single value in the range 1-3. Program the value from the column V1 in the list in the RFC 1/B documentation to map the appropriate control security code to the block of channels.

Incorrect Code Lockout/Communications Mode Switch Delay

The RFC 1/B disconnects itself anytime the user fails to enter a security code correctly when it is requested. After it disconnects, it will ignore incoming call attempts for a short period of time to slow repeated attempts at breaking a code. This lockout period does not apply to the local control connection. This value also determines the length of time the RFC 1/B will wait before switching communications mode when one of the communications mode 1 or 2 is used. These are the modes where the RFC 1/B answers in one mode, voice or data, and automatically switches to the other mode if it does not establish a connection. This should be set to 10 seconds if one of these communications modes is used. The communication mode programming is discussed previously.

8. Sending Data to the RFC 1/B



8. a. Remote Mode Programming

Remote mode programming is programming your RFC 1/B via phone line at a remote location.

1. Select "Remote DTMF" in the connection type group box.
2. If the codes are to be reprogrammed, then input the codes currently being used by the RFC 1/B in the boxes located at the bottom of the page.
3. Click Dial Site. My Sine will initialize the modem and dial the site. It will wait for the amount of time set in the Timing box and then output the access code. We recommend that you have the volume on your modem where you can listen to the communication between My Sine and the RFC 1/B. If the delay is too short, then disconnect by pressing the disconnect button. Increase the time and try again.
4. After My Sine has connected and logged in, press the "Enter Advanced Mode" button

5. Then follow the “local mode programming” instructions beginning with Step #4 below.

8. b. Local Mode Programming

1. Connect a phone cable from the "line" port on your modem to the "phone" port on the RFC 1/B. You will want the modem volume loud enough so you can hear the communications between My Sine and the RFC 1/B. You may also want to connect a phone in parallel with your modem using a phone line splitter if your modem volume is insufficient.
2. Press the “Enter Advanced Mode” button. My Sine will initialize the modem and then prompt you to press the button on the front of your RFC 1/B.
3. Press the button and hit enter, and the dialog box will close. My Sine will place the RFC 1/B in the advanced programming mode.
4. Selected the items you would like to program and set the Start and Stop points for that item. Even though My Sine can reprogram all items at once, it is quicker to select only the items you have changed.
5. Press the “Send Data” button.
6. After the program is complete, press the disconnect button and My Sine will send a 99 to disconnect.

8. c. Checking Your Progress Using The Ten Key Pad

At any time during the programming process, if you would like to check your work, do the following:

1. Press “Ten Key Pad”
2. Press “*” to exit the advanced programming mode.
3. Check the items in question.
4. Key in “80” to re-enter the Advanced Programming mode.
5. Continue programming within My Sine
6. Select the item, enter the start and stop points.
7. Press the “send data” button