

## Getting Started

Setup Tool 6 is software that simplifies programming an RFC-1 remote control. Using this tool is faster and easier than using the telephone interface to make system-side changes.

The software displays RFC-1 system options in logical groups by function. Selection tools are used to adjust the various features. When all settings are complete, the data is exported to a file for the RFC-1. This data file is uploaded to the RFC-1 through the web interface.

You must be familiar with the RFC-1 and the specific site installation to use this software effectively. The software can generate the data needed to program the system but it depends entirely on your input to generate appropriate data.

## System Requirements

Setup Tool 6 works with the RAK-2 and RCS series remote control systems that run firmware version 6 in the embedded RFC-1. The web interface must be accessible over the network and you must have access to the administrator settings to upload the data.

The software is compatible with Windows XP, Windows Vista and Windows 7 operating systems.

## Installation

The Setup Tool 6 installer is located on the memory device that is included with compatible systems. The software can also be downloaded from our website and [www.sinesystems.com](http://www.sinesystems.com).

The installer will create an entry for RFC-1 Setup Tool 6 in the Program menu and will provide a shortcut on the desktop. It is okay to delete the desktop shortcut if it is not needed. The program will not be affected.

A folder is created in the user documents folder, typically "My Documents". This is the default storage location for site data files created by Setup Tool 6.

## Operational Overview

If you have set up a standalone RFC-1 before then the settings in the software will be fairly obvious. This is a new method to adjust the system settings but the options should be familiar. The system may have new features and the software may expose features that are unfamiliar, but most of the options have not changed.

If you are not familiar with the RFC-1 then you should review the manual before using the setup tool. It is not necessary to know the system programming in detail but you should be familiar with how the system works.

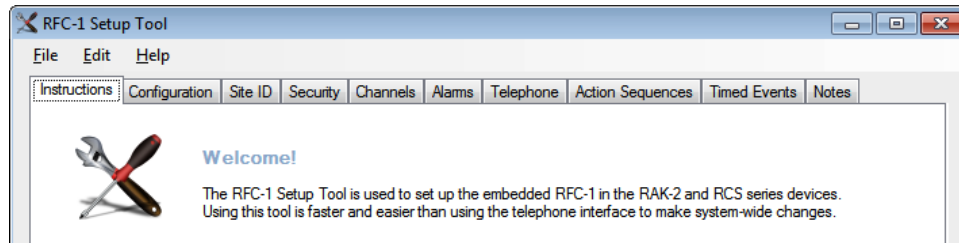
Setup Tool 6 stores data in "site" files that have the extension .SIT. Site files store all of the information about a site including optional data such as names for channels and phone numbers that are not used by the RFC-1. Each transmitter site that you set up will have its own site file. You can save as many site files as needed.

When all of the settings are adjusted as necessary and you are ready to program the RFC-1, export an RFC-1 data file. These files have the extension .RFC and they are encoded in a format that the RFC-1 accepts.

Use the web interface of the RAK-2 or RCS series device to upload the RFC-1 data file. Use the web controls to locate the RFC-1 data file on your computer. The file contents will be transferred to the RAK-2 and it will program the embedded RFC-1 with the data. The file transfers quickly but it takes a few minutes to program the RFC-1.

## Using the Setup Tool

When the setup tool starts you are greeted with a window that has a very brief set of instructions. The window has a standard menu bar across the top for opening and saving files and a row of tabs to access various system features.



A temporary site file is created when you start the program that has the factory default settings. All you have to do is start adjusting the settings and save the data.

## Opening and Saving Files

If you want to edit an existing site file or use an existing site file as the starting point for a new site, select File > Open from the menu. When you are ready to save your site, select File > Save from the menu. And similarly, when you are ready to export the site data to an RFC-1 file, select File > Export RFC file from the menu.

## Adjusting Settings

RFC-1 system features are arranged in functional groups. Access a group by selecting a tab in the program window. For example, to setup the telemetry channels, select the *Channels* tab. Tabs are in a logical order from left to right but they can be selected in any order.

As you complete each tab or page of data, click the *Apply Changes* button on the lower right corner of the page. Settings to the item are not committed until this button is clicked.

### Configuration Tab

This tab holds settings that describe the system configuration. Select a model number from the list to load the default system settings for that model. Then, adjust the options as needed.

The number of relay panels installed controls the number of available channels and controls the use of a block of shared memory in the system. The default value is 2 relay panels. It is okay to use this setting even if only 1 relay panel is installed to allow for future expansion.

### Site ID Tab

Use the controls on this tab to set the phrase that the system will speak when a connection is established.

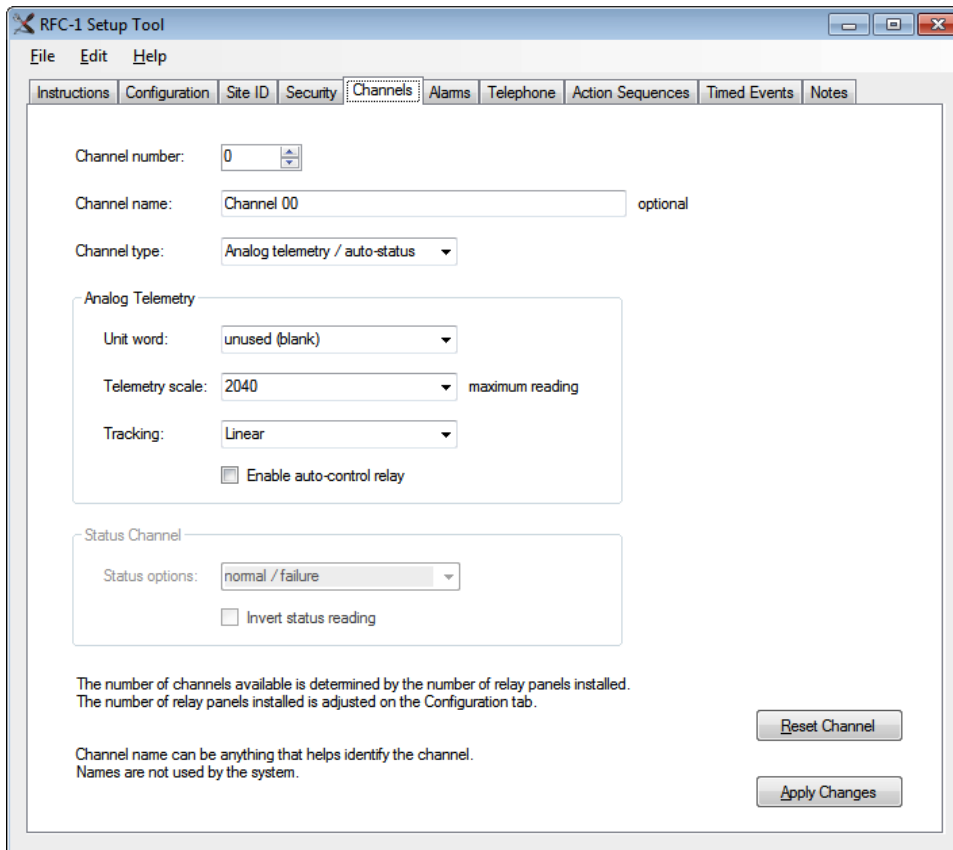
### Security Tab

Change the security codes for the embedded RFC-1 on this tab. These are only the security codes for the embedded RFC-1. The security codes for accessing the web interface are adjusted using the web interface.

When the security codes of the embedded RFC-1 are changed, you must log into the RAK-2 web interface and adjust the security codes stored there. The RAK-2 stores the main security code and the basic programming security code to the embedded RFC-1 so that it can adjust the clock and calendar.

## Channels Tab

Adjust the telemetry channel settings using the controls on this tab. The features available for a channel are enabled depending on the type of channel. So, for instance, unit words are enabled for analog telemetry channels but are disabled for status channels.



The screenshot shows the 'RFC-1 Setup Tool' window with the 'Channels' tab selected. The window has a menu bar with 'File', 'Edit', and 'Help'. Below the menu bar is a tabbed interface with tabs for 'Instructions', 'Configuration', 'Site ID', 'Security', 'Channels', 'Alarms', 'Telephone', 'Action Sequences', 'Timed Events', and 'Notes'. The 'Channels' tab is active, displaying the following controls:

- Channel number:** A numeric input field set to '0'.
- Channel name:** A text input field containing 'Channel 00', with the word 'optional' to its right.
- Channel type:** A dropdown menu set to 'Analog telemetry / auto-status'.
- Analog Telemetry section:**
  - Unit word:** A dropdown menu set to 'unused (blank)'.
  - Telemetry scale:** A numeric input field set to '2040', with the text 'maximum reading' to its right.
  - Tracking:** A dropdown menu set to 'Linear'.
  - Enable auto-control relay:** A checkbox that is currently checked.
- Status Channel section:**
  - Status options:** A dropdown menu set to 'normal / failure'.
  - Invert status reading:** A checkbox that is currently unchecked.

At the bottom of the window, there is a note: 'The number of channels available is determined by the number of relay panels installed. The number of relay panels installed is adjusted on the Configuration tab.' Below this note is another note: 'Channel name can be anything that helps identify the channel. Names are not used by the system.' At the bottom right, there are two buttons: 'Reset Channel' and 'Apply Changes'.

Telemetry channels can be given names that are stored in the site file. Names are not used by the RFC-1 but they are saved with the site data. The setup tool uses names to identify channels when telemetry alarms are set.

## Alarms Tab

Set up telemetry alarms using the controls on this tab. Alarms depend on action sequences to perform a task when the alarm conditions are exceeded. The RFC-1 has several built-in action sequences to perform common tasks such as calling telephone numbers. See the *Action Sequences* tab if you need to perform a custom task. Use the default setting if you are not certain what to select here.

If you need assistance choosing appropriate telemetry alarms, set the telemetry channel number and trigger rule, then click the button labeled *Limit Generator*. A new window opens with suggested data based on the telemetry channel that is selected. Adjust the controls in the Limit Generator window to calculate alarm limit data. When the alarm limits appear correct, click the button labeled *Copy Limits* to copy the data back to the main alarm window.

The limit generator calculates suggested data based on telemetry channel settings and your input. If you adjust the telemetry channel settings after choosing alarm limits it is possible for the settings not to work as expected. Calibrating the telemetry channel to a value that does not agree with the data provided can also cause the alarm to not work as expected.

**Telephone Tab**

Use the controls on this tab to program the telephone numbers that are called when an alarm occurs. Telephone numbers can be given names that are stored in the site file. Names are not used by the RFC-1 but they are saved with the site data.

**Action Sequences Tab**

Program any custom action sequences that are required using the controls on this tab. An action sequence is a programmed series of actions to perform a specific task. An action sequence does nothing by itself. Action sequences are used by telemetry alarms and by timed events.

The embedded RFC-1 that is part of the RAK-2 and RCS series devices has eight user-programmable action sequences that are programmed using the controls on this tab. These devices also have several pre-programmed action sequences to perform common tasks.

Action sequences can be given names that are stored in the site file. Names are not used by the RFC-1 but they are saved with the site data. The setup tool uses names to identify action sequences when telemetry alarms or timed events are set.

**Timed Events Tab**

Program any timed events that are required using the controls on this tab. Timed events are used to perform tasks such as turn the transmitter on and off or adjust to various power levels a certain times of the day.

Timed events depend on action sequences to perform a task. For example, suppose you need to turn a transmitter on and off each day. A timed event is programmed to activate an action sequence that turns on the transmitter. Another timed event is programmed to activate an action sequence that turns off the transmitter. The timed event holds the time-specific information and the action sequence performs the task.

**Notes Tab**

This tab holds any notes that you want to include about the site. This data is optional and is not used by the RFC-1.

## Exporting RFC File

Create or load the site file that contains the information for the site that will be programmed. Select File > Export RFC file from the menu. A file save dialog will display for you to specify the location and name for the RFC file.

### RFC-1 Transmitter Site

Readings
Alerts
Control
Status
Settings

System Options
Network Settings
Email Settings
Dynamic DNS
Setup / Restore

The advanced programming security code is required to setup and restore the RFC-1. The system does not save this security code and system settings cannot be adjusted without administrator control.

#### Systems Status

RFC-1/B	Status
System Activity	idle
Setup & Restore Activity	idle

#### Setup RFC-1


Use the RFC-1 Settings tool to setup system options and export a settings file. Use the *Browse* control to locate the file. RFC-1 settings files use the .rfc extension. Enter the RFC-1 advanced programming security code and click *Upload Settings* to send the settings to the embedded RFC-1.

*The programming sequence will take a few minutes to complete. Do not interrupt the sequence! Do not use the system until the status message indicates that the sequence is complete.*

RFC-1 Programming Code:

RFC-1 Settings File: Choose File No file chosen

Click to Start: Upload...

 Sine Systems

To upload this data to the embedded RFC-1, use a web browser and connect to the appropriate RAK-2 or RCS series remote control. Navigate to the settings area and locate the RFC-1 setup controls. Use the controls to enter the name of the newly created RFC file and upload it to the system. The file will transfer and be programmed into the embedded RFC-1.