Test Manager Users Manual

RTS

Version 3.0

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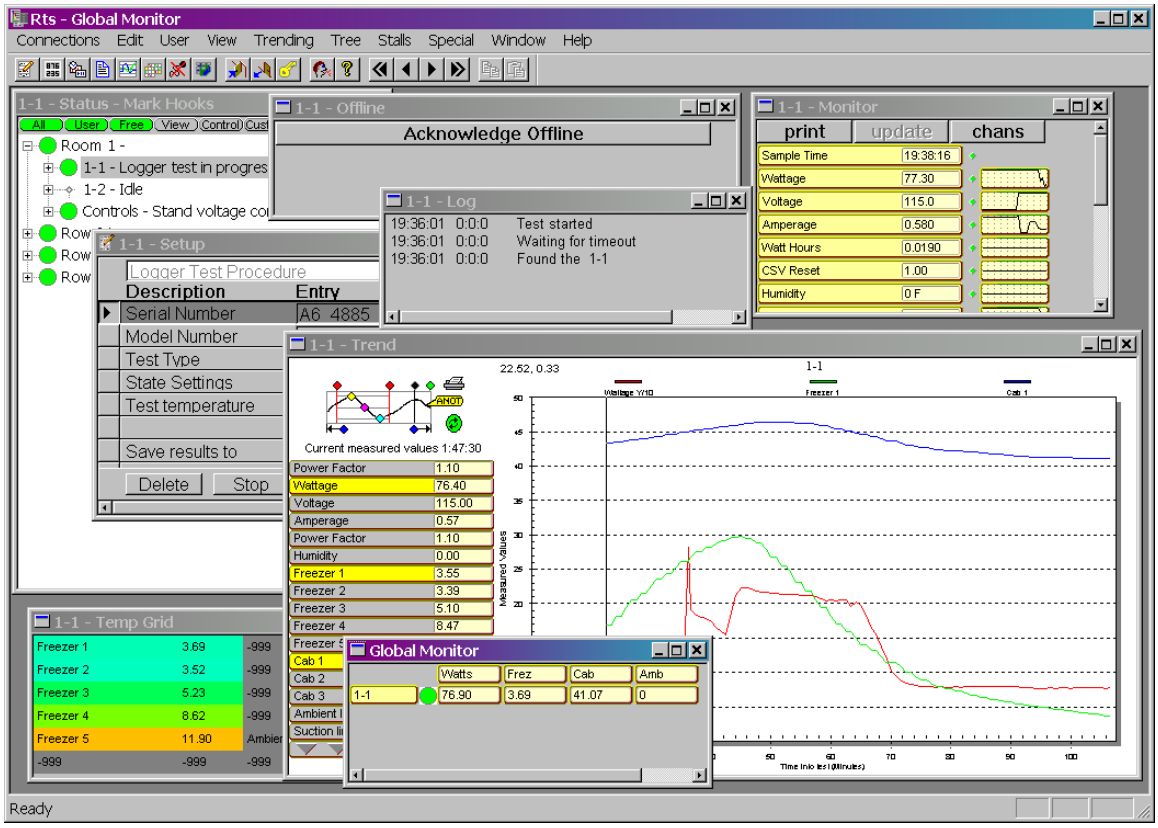
RTS Test Manager Users Manual

Overview

This document describes usage of the RTS Test Manager program (RtsMan.exe). Step by step instruction is provided for selecting tests, entering data, viewing information and viewing results.



Starting the Test Manager

The RTS Manager is started by running the RtsMan.exe program. Generally a shortcut is provided on the desktop and the Start menu. After launching the manager, a log-on dialog may be displayed (may be disabled by the system administrator).

Enter the description of the PC you are running the manager on. This description will be listed to the other users when selecting PC's to chat with.

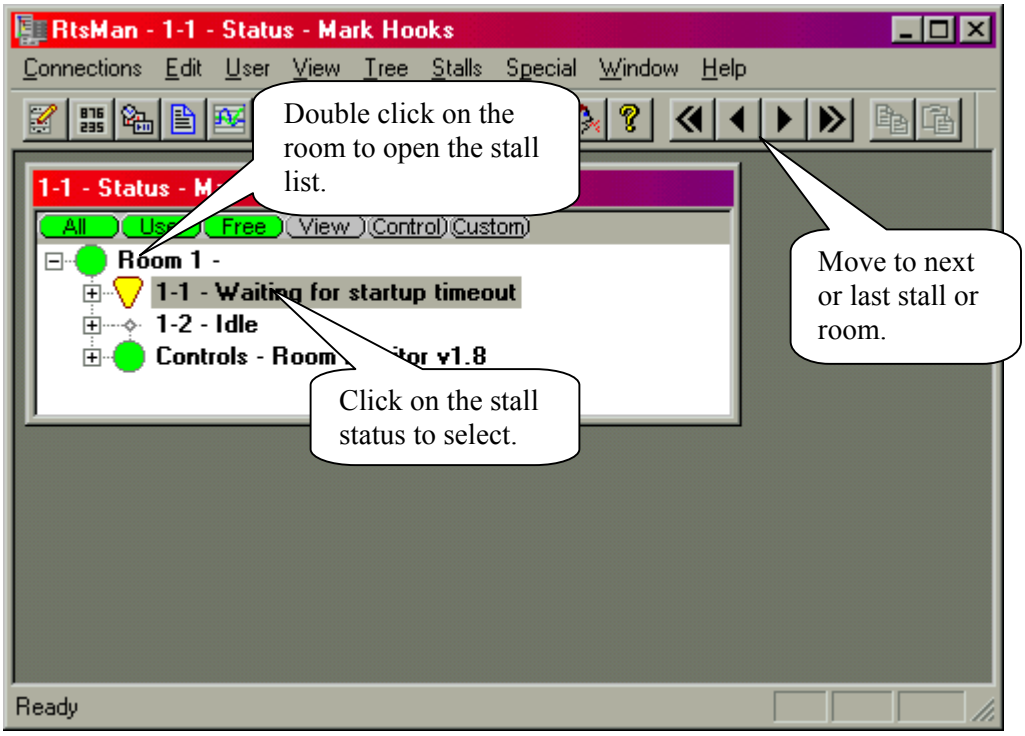
Next enter your user ID assigned by the test system administrator. This is **not** your log-on ID used when starting the computer. The ID's and user names are created using a special administrative tool.

Optionally the logon can be based on the computers network name and the current users name entered when the PC booted. In this case no Test Manager Log On dialog box will be displayed.

The users log on is used to assign ownership of stalls when tests are started. Make sure you log off the manager if security is in use.

Selecting the Room and Stall

The manager can provide control for a large number of rooms (chambers or other test areas) and stalls (product under test). To select a specific stall first open a room by double clicking the title or clicking on the + symbol. Next click on the stall status message to select a stall inside the room.

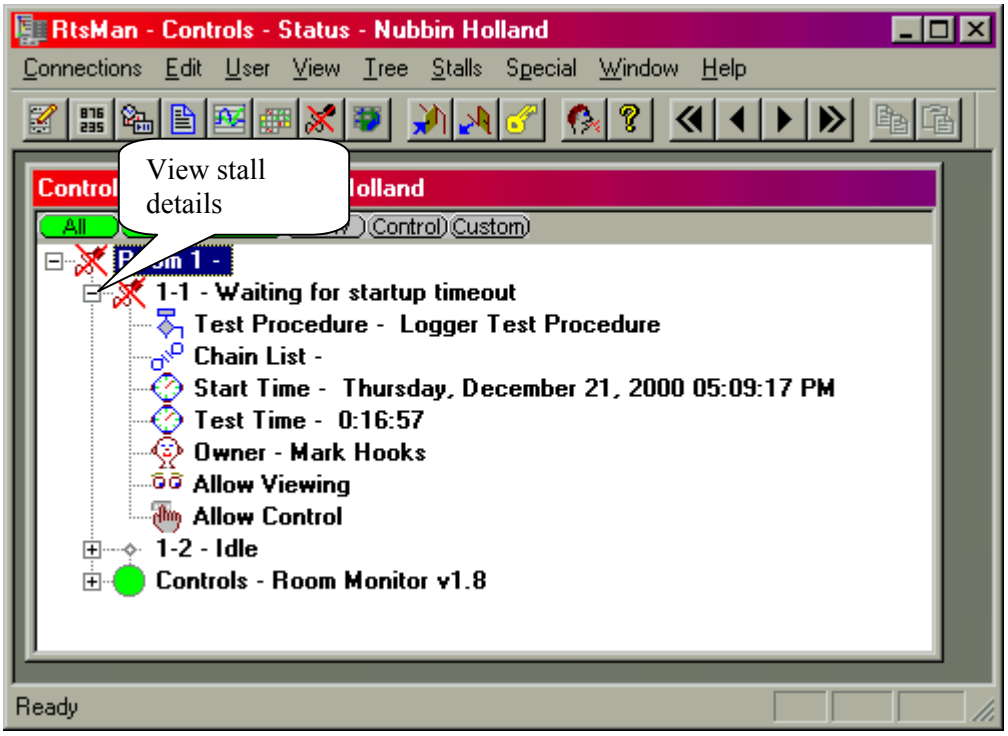


When the stall is selected all open views will be updated with the current information. This allows the user to quickly view stall information with a single mouse click.

The small icons next to each stall and room indicate the current status of the test. Each test procedure can use a wide variety of colors and shapes to inform the user about the test conditions.

Viewing Stall Details

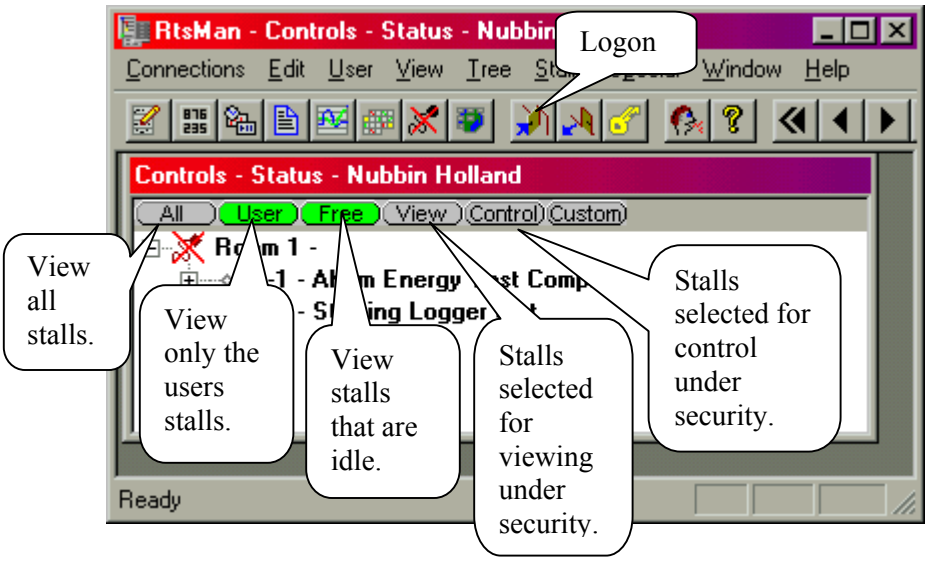
The + symbol next to each stall provides extended information regarding the stall details. By clicking on the symbol the view is expanded or collapsed.



Test Procedure – Title of the current procedure running on this stall.
Chain List – Title of the multi-test chain list running (see test chaining).
Start Time – Date and time the test procedure was started.
Test Time – Total test length from start. Also displays the delayed start time.
Owner – Name of user that started the test.
Allow Viewing – List of users that are allowed to view the test (see security).
Allow Control – List of users that are allowed to control the test (see security).

User Views

On larger systems the user may only be responsible for a few stalls or rooms. User views allow the number of displayed stalls to be reduced. This makes tracking the users stalls and room easier. The users name is assigned to each test/stall he or she starts.



All – View all stalls regardless of other view settings.
User – View stalls running and assigned to the current logged on user.
Free – View any stall that currently has no test running.
View – Show stalls that other users have assigned your name to the securities view list.
Control – Show stalls that other users have assigned your name to the securities control list.
Custom – Not in use at this time.

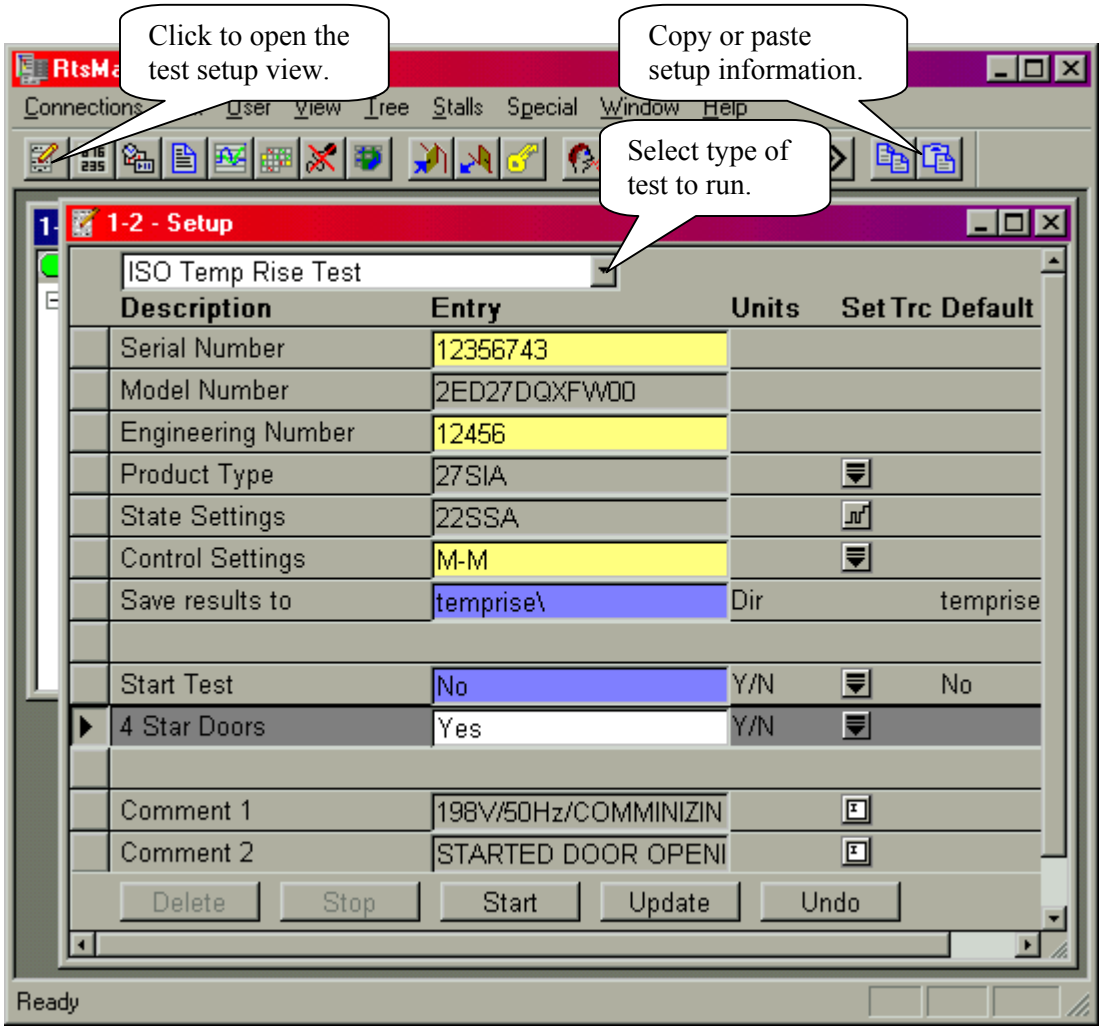
The View and Control options are used when other users have enabled security and you are maintaining their stalls. Refer to the section on stall security for more information.

Refer to the section on Stall Details to view the list of owners and security settings.

Note : Make sure your name appears in the managers title bar before starting any tests. If needed logon to the manager first.

Test Procedure Setup

Each stall under RTS maintains completely independent information and procedures. The only exception is the room (global stall), settings can be read or controlled by stall procedures running inside the room. This allows tests to change or read global information (i.e. chamber set-points or voltage set-points).



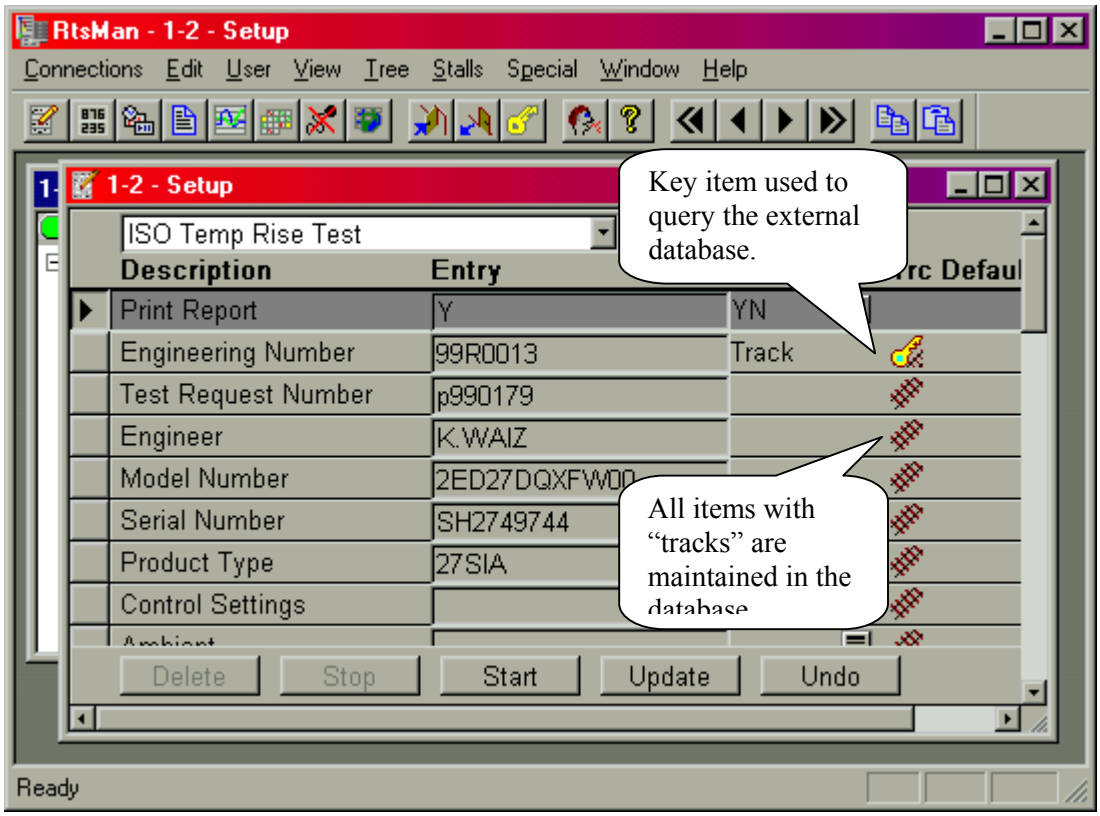
Two methods are provided for opening the setup view. Select the stall then open the setup view by clicking on the icon in the tool bar. Or a right button click over the stall will open a shortcut menu used to open the setup view.

If the stall is idle (no test running), the procedure can be selected. Procedure selection must be performed before entering any test data. Each test procedure may have special entries required for proper operation.

Refer to the Standard Test Procedure manual for details on individual procedures.

Tracking Setup Information

RTS is capable of track settings and information from external databases. The databases can be updated by other programs used inside the company (i.e. test request system). Information is tied to a "key" field in the test setup. When a change is made to this field, a query is performed on the database to obtain all items marked for tracking. Any changes made to a tracked field are automatically transferred back to the database.



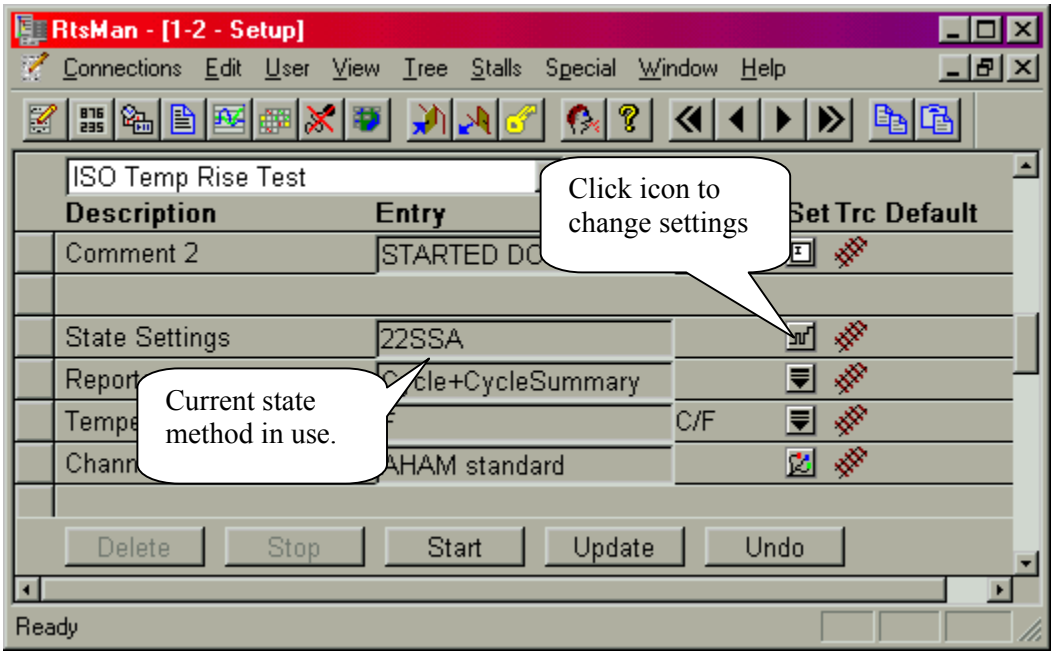
When a product is moved from stall-to-stall and room-to-room all setup information will automatically follow the product. Additional databases can be attached to test procedures to record test results or any information entered by the users.

The key item can be set to any database field required. Generally the test request number or serial number is used. Each test procedure can list unique items for tracking in the database. All setup entries can be used inside the test procedure and are automatically copied to the test results for reporting.

Note : No change is made to the database until the "Start" or "Update" buttons are pressed.

Product State Settings

For most test procedures to operate correctly the product state must be know at all times. Four states are defined 1 Compressor Off, 2 Compressor On, 4 Defrost and 8 Recovery. In most cases the product wattage can be used to determine the state. Each stall can be configured for different state method settings. Each method is assigned a name by the user. The name should describe the product size and type of measurement.

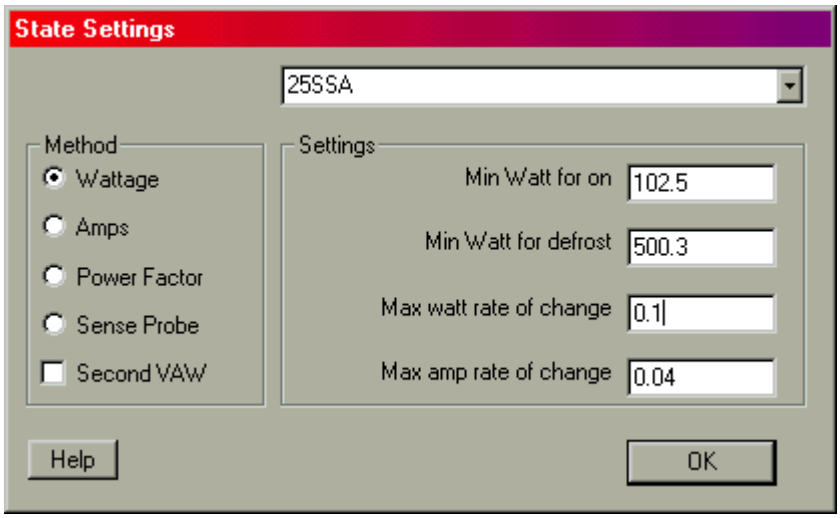


The settings can be changed while the test is idle or running. This allows modification to a method if problems are noted while running a procedure. It is highly recommended to verify the method is working correctly when a new product is tested by the system. View the current state, total on, off and defrost times in the manager Display Views. The values should look real to the user (no excessive defrost or off times).

Note : The information for each method is stored on the test server by the method name. This means all stalls using the same method name share all settings. Changing one stalls method may effect other tests currently running.

State Method Parameters

RTS supports four methods for determining the product state. The following section describes each method and the required settings.



Wattage Method – Uses only the wattage to determine the current state. The "Min Watt for on" is set to a level less than the lowest run wattage but higher than any off condition. The "Min Watt for defrost" is set less than the defrost wattage. The "Max watt rate of change" is set to the watts per second change rate when the compressor starts. The "Max amp rate of change" is applied to the amperage input.

Amps Method – Uses the amperage input to determine the product state. The settings are similar to the wattage method.

Power Factor – The compressor power factor is used to determine the product state. This method is effective if the defrost wattage is equal to or less than the compressor wattage. The system can measure power factors in the range of 0.5 to 0.98.

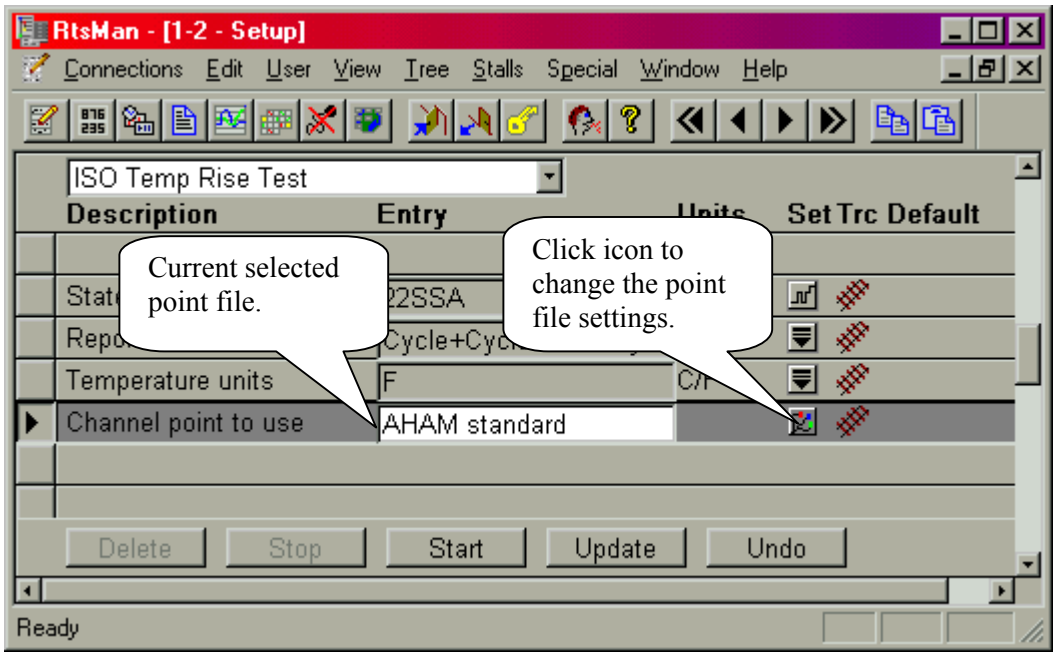
Sense Probe – Uses a special input channel to measure the compressor voltage or current. Connections must be made directly to the compressor to use this method.

Note

All methods use the "rate of change" to control the compressor inrush current spike reporting. This value must be set greater than 0 and less than 1 for proper operation. To disable this feature set the values to 1000. If the value is too large RTS may mistake a compressor start as a defrost. If the value is set too low the state may not be determined for an extended period.

Input Channel Point Configuration

Each stall can be configured for one or more input channels. All stalls are independent and may have different channel counts. Channel point files are used to describe the current input configuration. A test procedure may also load other point files to configure permanently assigned channels (i.e. volts, amps, watts, etc.). Other point files may be loaded based on user selections (i.e. use Yokogawa or use RPM measurements). The point file settings are accessed from the test setup before the test is started. After starting a test no changes are allowed to the configuration.

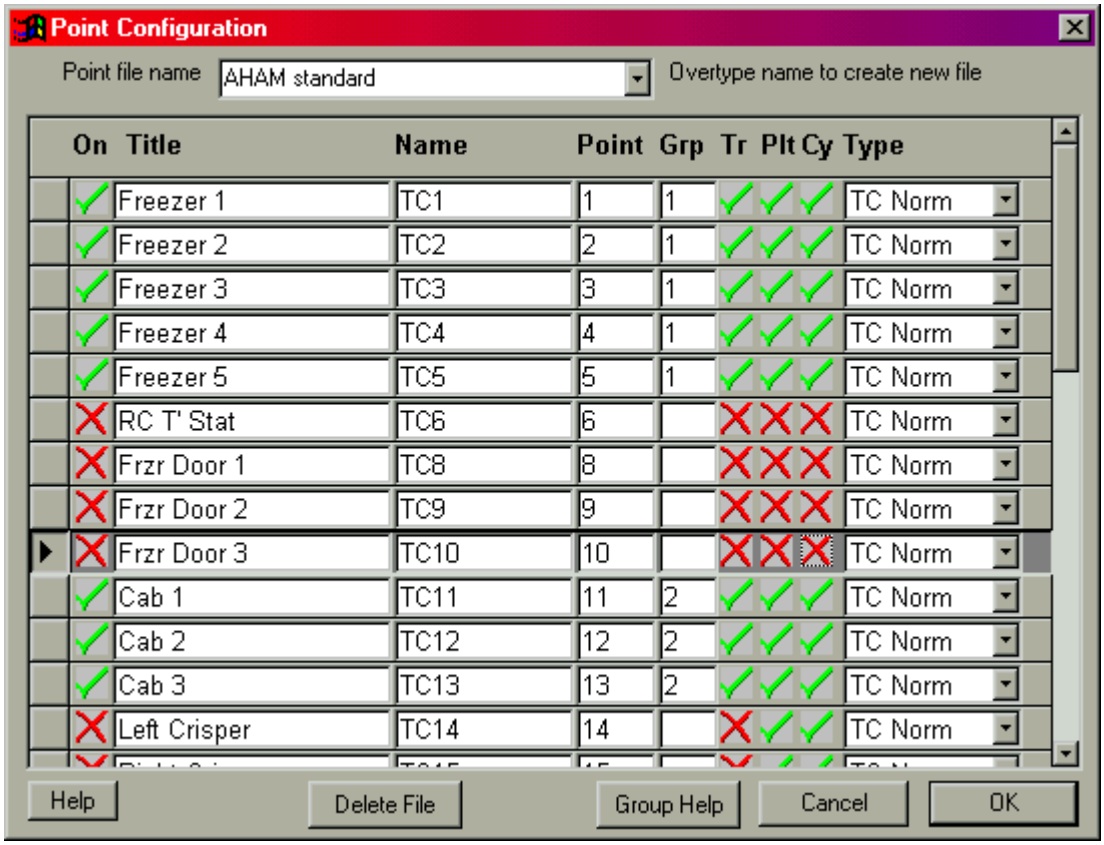


The user should arrange and name point files based on the type of test and any special uses. The name should describe the configuration and allow other users to understand it's use. There is no limit to the number of point files used in the system. All user point files are located on the test server PC under the Point directory.

After the test is started a copy of the point file is saved with the selected stall. Changes to a point file from another stall will have no effect on the running test. Special point files should include the name of the user (i.e. Franks pull down) to simplify maintenance of the files on the server.

Point Configuration

Each item is assigned to an input point located on the stall. All stalls use the same point numbers, this allows the same point file to be used on any stall in the system. Mapping files are used to "map" the hardware inputs to each point number.



On – Enables or disables the point. When disabled no readings will be collected from the input. This also will remove any information from the printed results.

Title – Title or description of the point. The title will be printed in the final test report.

Name – Internal name of the point used in the test procedure. This name should not be modified and is used in the report formatting. Changing the name may cause report tool errors.

Point – Point number assigned to the Name for this item. The number is mapped to a input channel on this stall.

Grp – Group to assign the point to. Groups are used to report overall values (i.e. freezer average). Most reports include totals for all TC's located in the cabinet, freezer and ambient.

Point Configuration continued

Tr – Selects point for real time trending. Values will be collected for viewing while the test is running. The PostAnl / Trending program is used to view the data while the test is running.

Plt – Selects point for storing archival plot data. Points must be selected for plot data for viewing after the test has completed. This is also required to generate charts in Excel.

Cy – Stores cycle database values for the point. Point must be selected to view reported values for min, max and averages in Excel reports. For each transition of the product to a new state, the min, max and average values are saved. This state information is used to generate report data (i.e. average on wattage, temps, etc.).

Type – Sets the method to filter the input channel.

General / TC Norm – Applies rate limiting and filtering to the measured values. Most inputs can use this type with exception to fast changing signals. This also adds a F or C character to the monitor display value.

TC Fast – No rate limits or filters are applied to the input. This would be used for fast changing inputs (i.e. compressor dome or suction line).

TC Slow – A long time constant is applied to the input signal. Can be used to filter out noise from input signals.

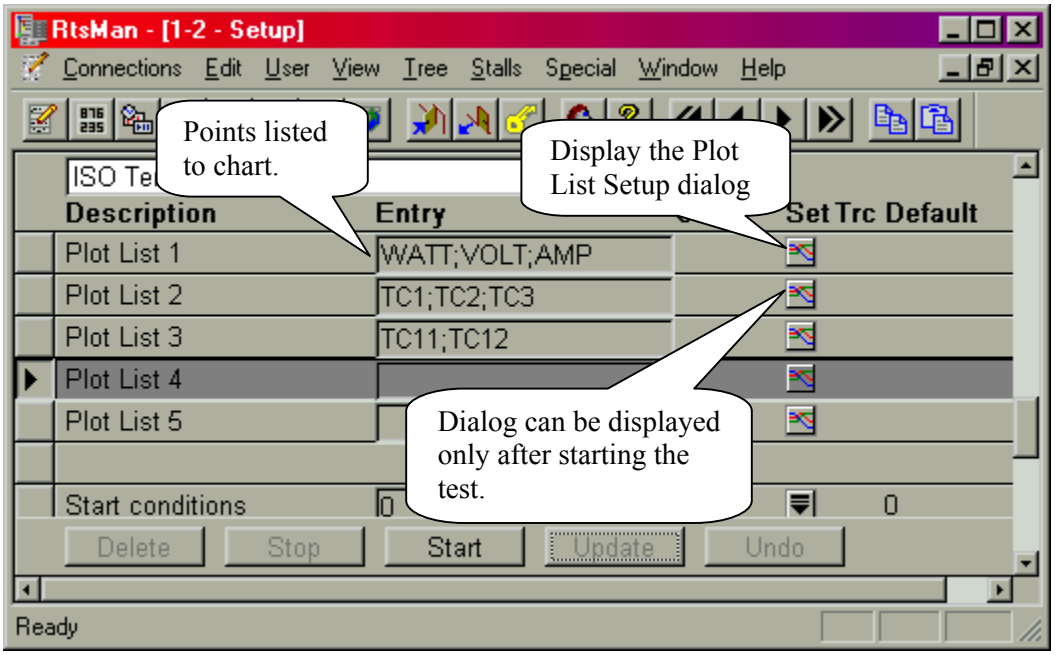
DC Fast – Used for all non TC inputs. This includes pressures, RPM or other special input signals.

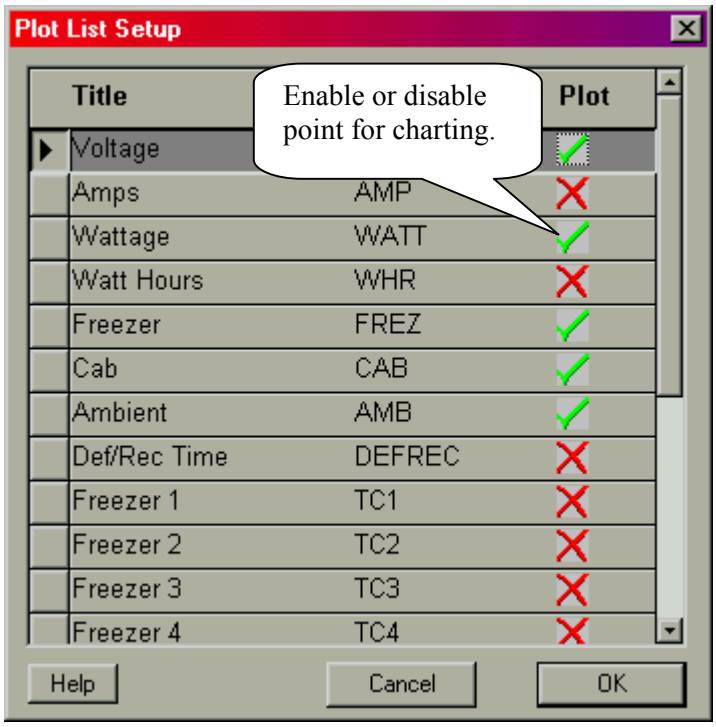
Noise Filter – Applies a special filter to reduce noise with a fast response time. This filter may be effective for measuring TC's located near electrical components.

Sense State – Special input used to determine the compressor is running. Only use this mode on a single input and the mode sense method of product state.

Plot List Settings

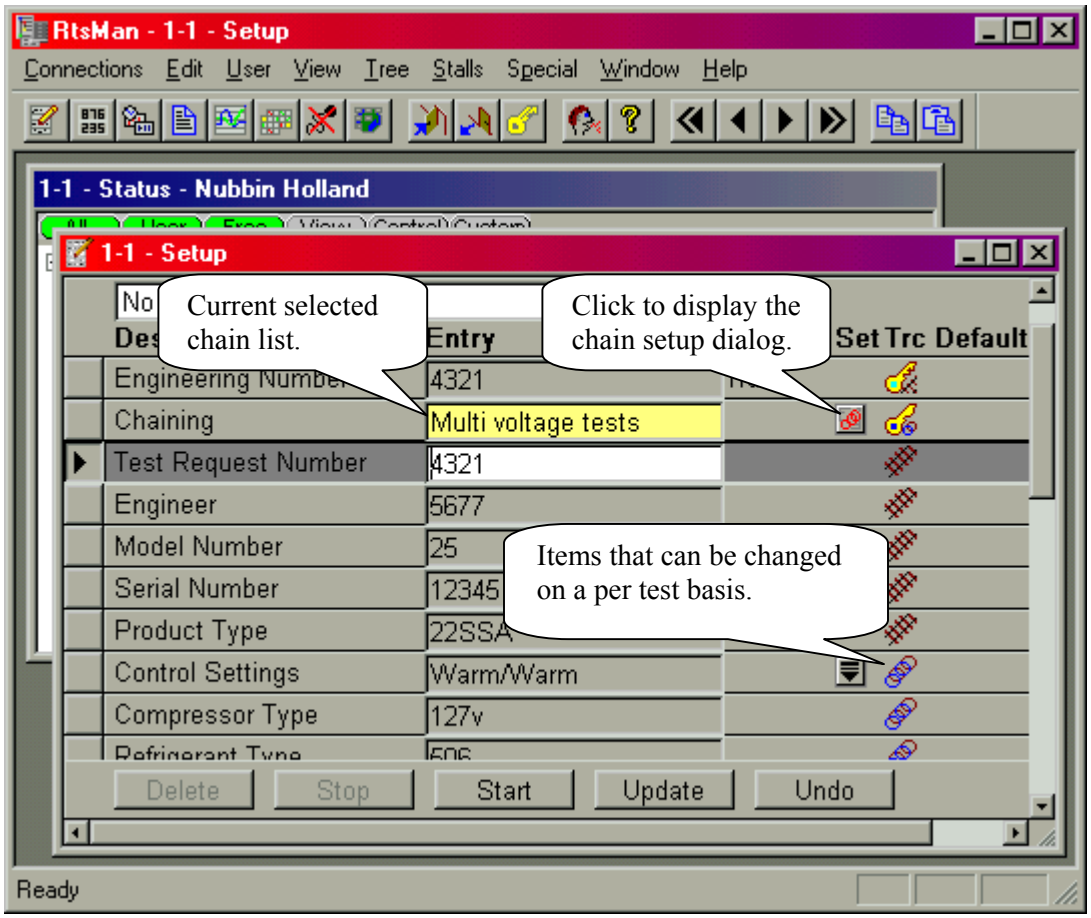
The plot list settings allows the operator to select from one to five output charts when the results are generated by Excel. A list of point names are entered or selected by the user. After test completion Excel will generate the report and attach the charts to the printed results.





Multiple Test Chaining

RTS supports chaining of multiple test procedures. Each test can have unique settings for one or more setup items. After completion of a test, the next test is loaded, settings are changed and the test is started. This feature requires careful attention by the user to ensure all settings are correct. Each stall uses the same list of steps but maintains unique settings. A database is used to maintain the chain lists and setup items.



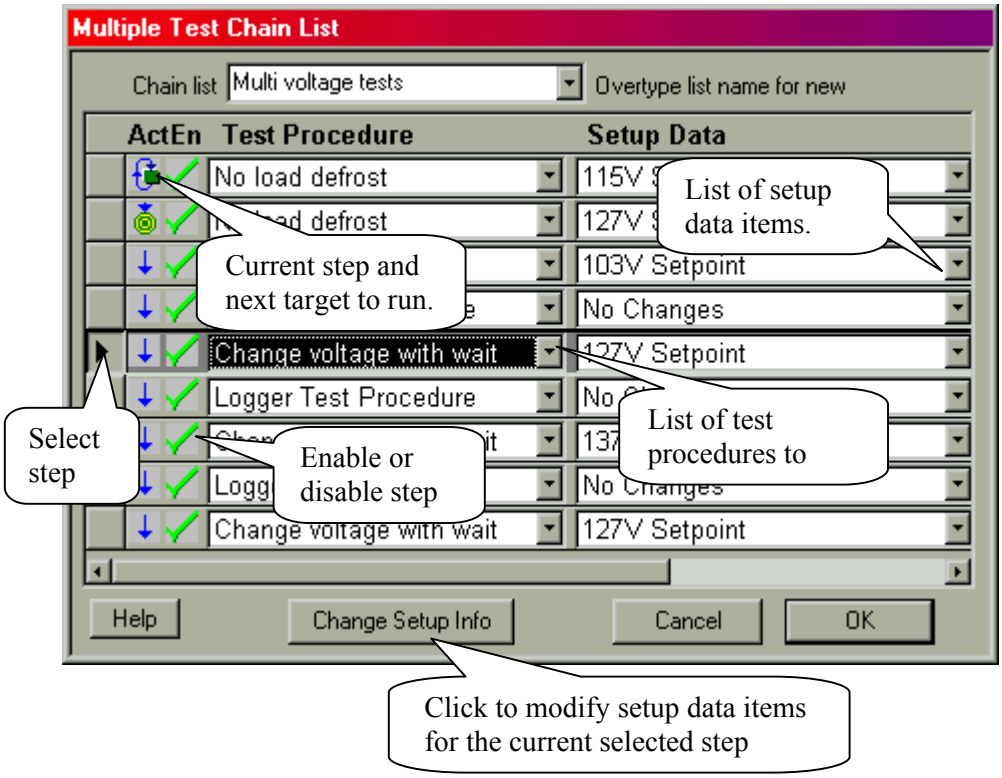
When the test is started, enabling a check-box will begin the chain list at the users selected point. After starting a test, the “Delete” and “Stop” buttons have modified functionality.

Stop button will abort the current test and start the next test in the chain list. No data will be saved for the current test.

Delete button will abort the current test and the stall will be at idle. Tests must complete correctly for data to be saved and results printed.

Chain Configuration Dialog

Multiple chain lists are supported and are shared by all stalls. Each list can contain one or more test procedure steps. Each step can modify setup data items that are marked with "chains". The setup data items are unique for each stall.



To add additional steps, move to the bottom of the list and press the Down Arrow key on the keyboard. A new setup will be created. Use the "No Changes" Setup Data selection to avoid making changes to any setup data items between each step.

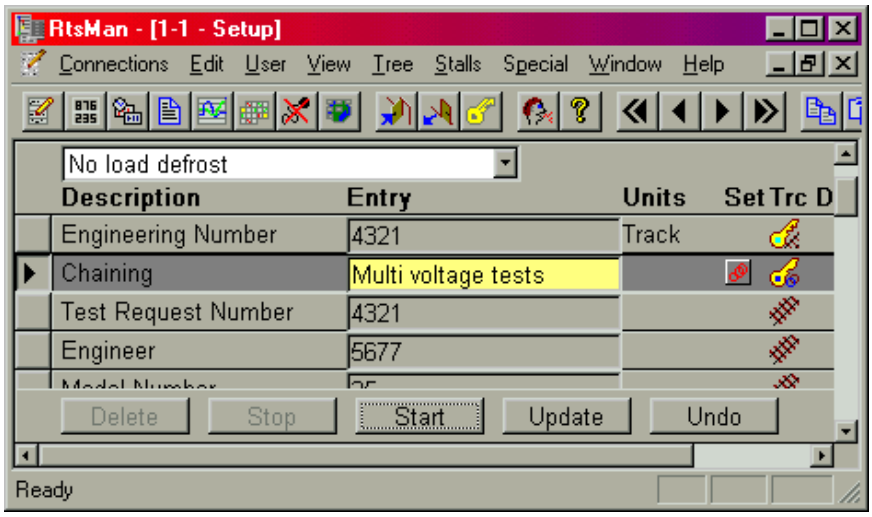
To make changes to setup items when no test is running: Select the step by clicking on the left-most button in the view. Make sure the proper "setup Data" field is selected. Click on the "Change Setup Info" button, this will load the setup items with the proper values. Make changes to the items with chain icons in the setup view. Click the "Update" button in the setup view to save the changes. Permanent changes can not be made while the test is running.

The next test to execute "target" can be repositioned before or after the test chain is started. This can be used to start a test down the list or repeat a test after the chain has started. To abort the current test and jump to the next target, use the "Stop" button on the setup view.

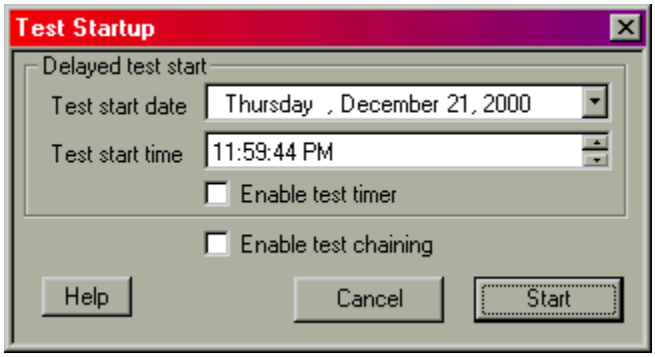
During chaining the setup data items are updated between tests. A 10 second delay is added before the next test is started.

Starting The Test

After the test is selected and all settings are made click the Start button on the setup view.



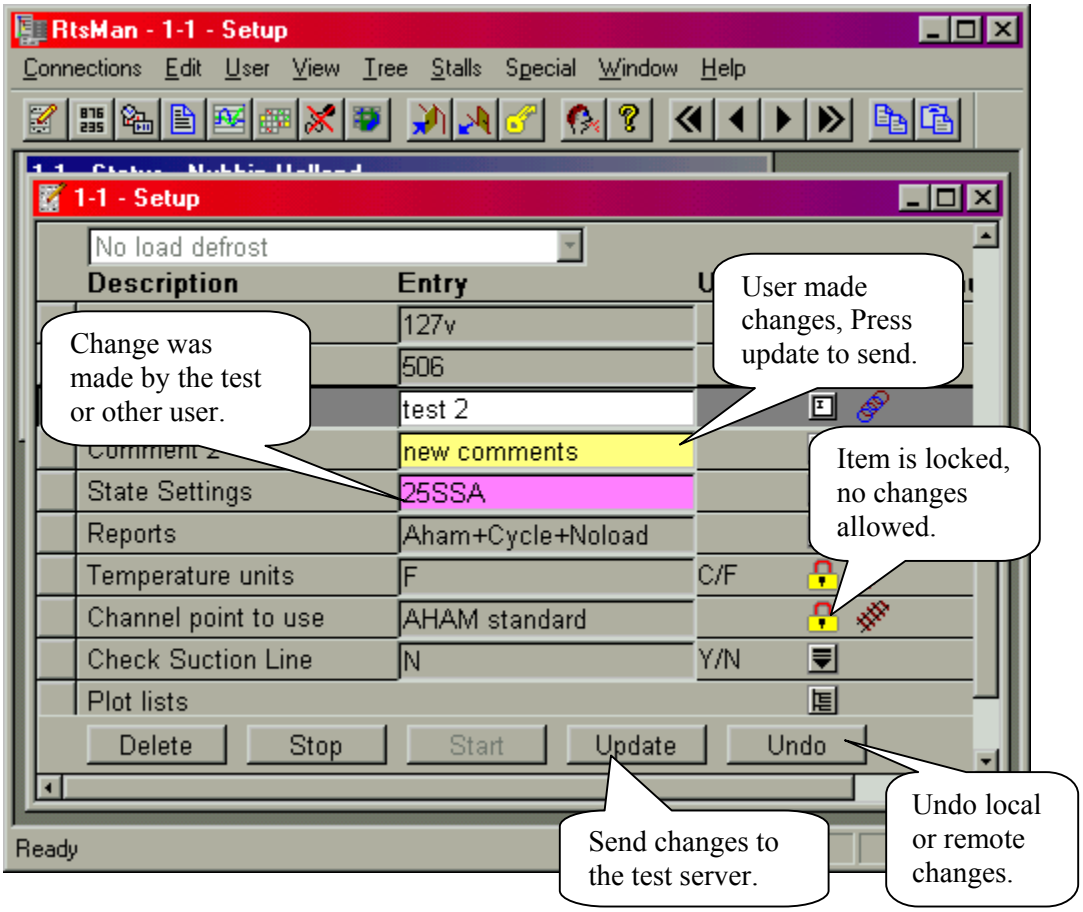
The Test Startup dialog will be displayed with two options. The actual start can be delayed until a specific date and time. If test chaining was configured, make sure the check box is enabled.



After starting the procedure verify proper operation by viewing the Stall status messages and icons.

Making Setting Changes

Changes to setup items can be made after the test is started. Unless the item is locked, any value can be modified. All setup information is saved to the test results only when the test ends normally or is stopped.



If changes have been made, but not sent to the test server the item will turn yellow. If the item turns magenta, the change was made by the test server or other user. The undo button will change all yellow and magenta items back to the last setting.

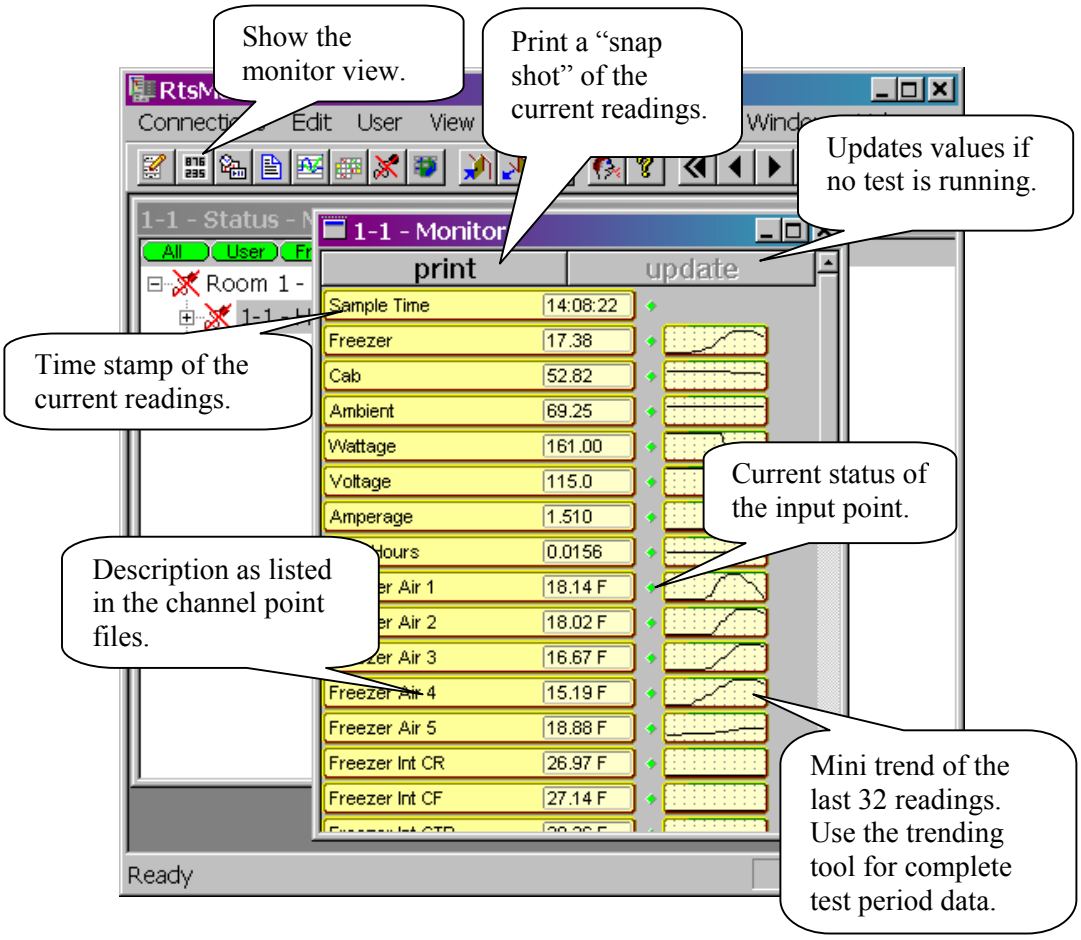
Once changes have been sent to the test server no undo is allowed. If the user has made changes and attempts to select another stall, a message is displayed asking to disregard the changes.

The test will continue to run until normal completion, error or the user stops the test. Refer to the test log for the stall for compete details on the test history. The log will be reset when the next test is started.

Monitoring Values

The reading monitor view provides a list of all input points configured for the selected test procedure. All user defined channels are configured from the test setup view, channel point settings dialog. Most tests predefine a number of channels for viewing fixed inputs. The monitor view is accessed from the tool bar or by doing a right click over the stall status and selecting the monitor.

The readings are updated when new data is received from the front-end hardware. The interval is based on the scan rate of the front-end from 1 to 20 seconds. The mini-trend shows the last 32 samples and provides an indication of the stability and direction of each reading. Open or invalid values are shown as –999 and the status icon will change.

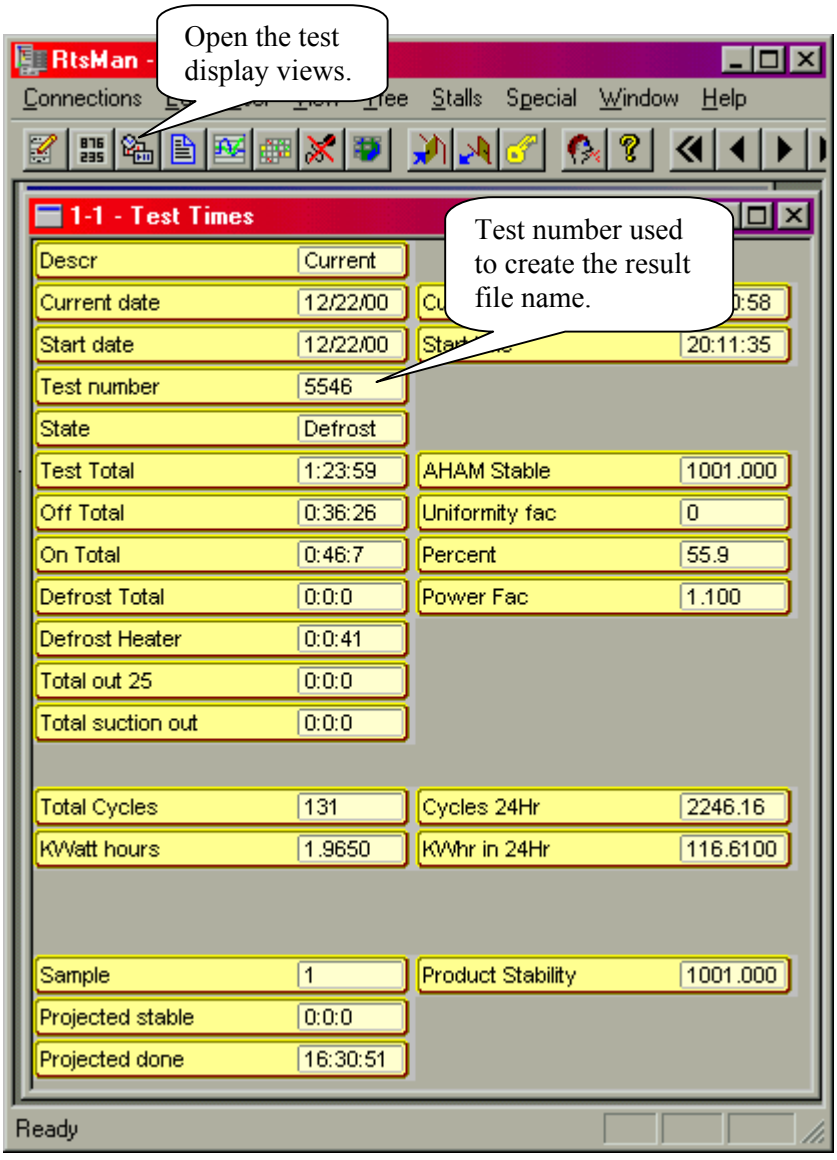


Based on the system configuration and the type of front-end hardware the values may continue to update after the test has ended. When the test server is first started no point information is know and no values will be displayed.

The Update button triggers a single scan on the front-end hardware. This is only used when no test is running. Also this feature may not be supported by all front-end hardware.

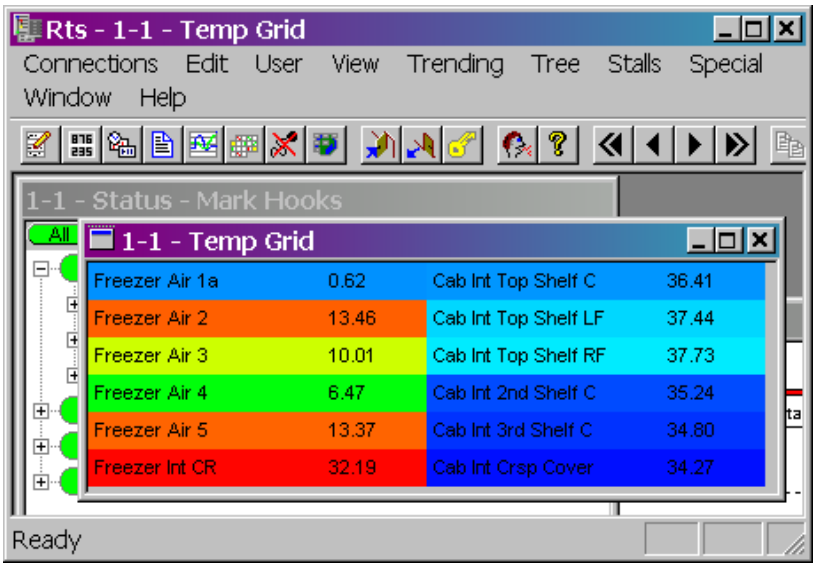
Test Information Display

Each test procedure will have one or more information displays. Each display will show specific information related to the procedure. Most procedures use common displays to show the total test times, cycles, Kwatt hours and other information. It is assumed the user is familiar with the values displayed in the views. Refer to the test procedure documents and requirements for more information.



Color coded views

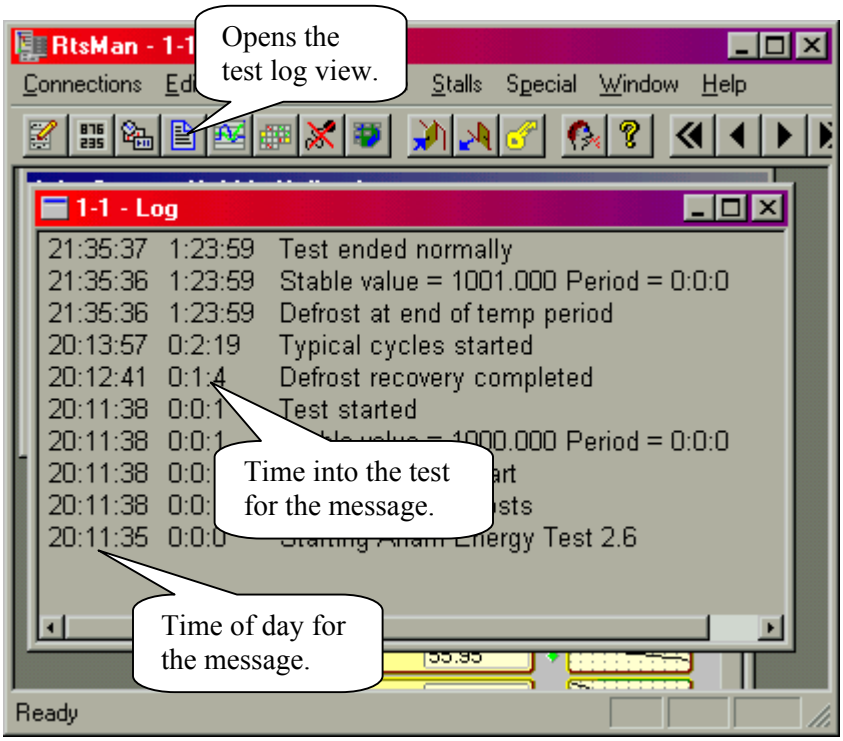
Any cell in a display can be color coded based on a range of values. This can be useful for monitoring temperatures from multiple inputs. Variations can be easily seen at a glance.



Note: The color ranges are defined by the test procedures display configuration files. Contact your system manager to add additional views to the procedures.

Test Logs

The test logs provide a detailed list of events that occurred during testing. All log entries are created by the test procedure and reflect the normal step-by-step operations. Entries are also created when a procedure error occurs. Always refer to the test log if the procedure halts with an error. In some cases the test server status window may provide additional information.



When a new test is started the log information is cleared. Optionally the test log information can be saved along with the test results. Permanente log storage requires changes to the test procedures. Please refer to the programming manual for more information.

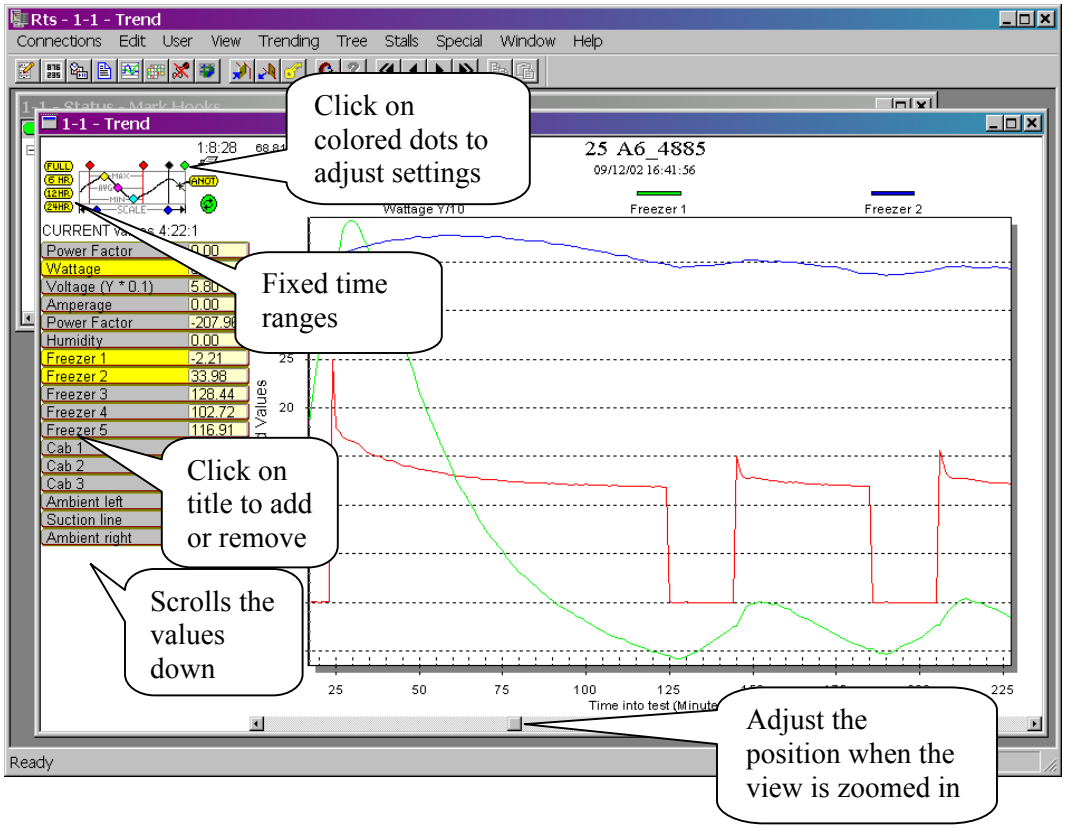
System Logs

Logs are also available for the System Manager and RTS Test Server programs. From the program menu select View and the local error log or server errors. Local errors report any problems found while running the manager. The sever errors list the last 25 messages listed for all RTS applications running on all test servers. This can be useful on large systems with multiple PC's running the RTS server applications.

Real Time Trending

Real time trending allows viewing any portion on a test that is currently running. The trend information is retained until the next test is started. A tool bar button is provided to launch the trend/chart view.

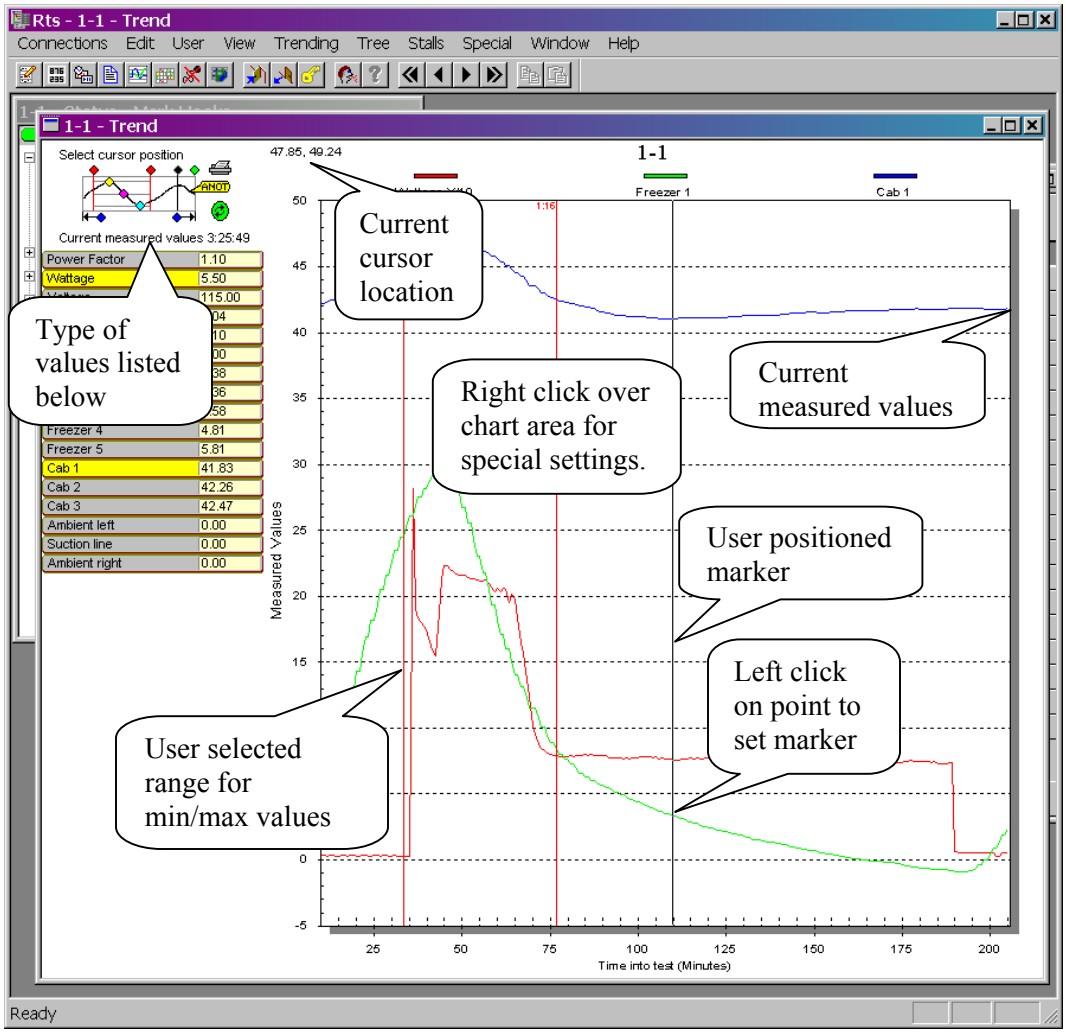
The trend view provides a wide range of tools used to view and analyze measured values. Any point selected for trending in the point file configuration can be added to a trend view. The following shows a zoomed in view of collected values. The picture in the upper left corner is used to control the settings.



Up to 15 points can be selected for trending. Adding or removing points is accomplished by clicking on the titles. A selected point changes color to yellow and the title is added above the chart area.

The measured values located along the left side of the view can show one of the following types:

Current measured values, taken from the far right chart edge.
Values located at the user positioned vertical black marker.
The minimum, avg min, maximum, avg max, and average over a selected range.

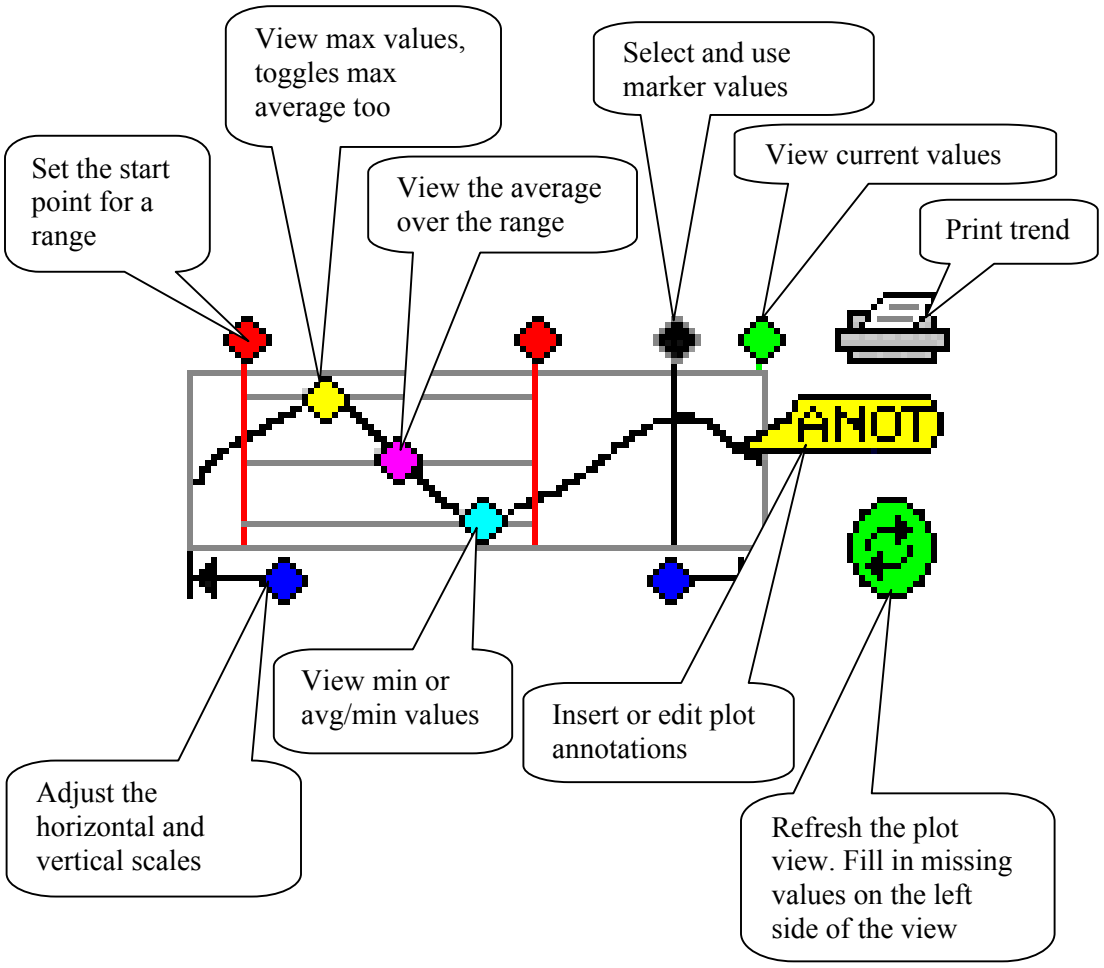


Zooming

To zoom in for more detail, hold the Shift key down, locate the mouse pointer at the starting point, next hold the left mouse button down, drag a box around the area to zoom, release the mouse button, last release the shift key. This may take a little practice! Multiple zooms can be performed. To zoom out press the "Z" key on the keyboard. When zoomed a horizontal scroll bar will be added to the view.

Controlling the view

The graphic located in the upper left corner of the trend view is used for control. By clicking on the various colored objects in the graphic, features can be changed. Please refer to the following detail for more information.



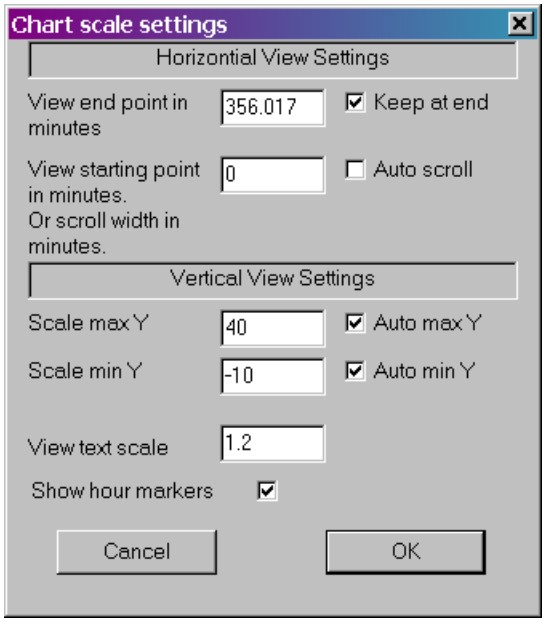
Additional controls are provided by “right clicking” the mouse over the chart area. A menu is displayed allowing extended view changes. The changes are temporary until the chart is refreshed.

When selecting a marker location (vertical black line) the mouse cursor must change into a “hand” before selecting the point. The hand cursor appears when the mouse is over a sample point.

When selecting a range for viewing the min, max or average values, Any area of the chart can be clicked on. The average max or min values is calculated by collecting each peak or valley from all cycles inside the range. The average of all peaks or valleys is displayed. This feature is selected by repeated clicking on the yellow or cyan buttons in the graphic section.

Adjusting the plot range

The horizontal (X) and vertical (Y) ranges are adjustable by clicking on the blue buttons in the graphic area of the trend view. The following dialog is displayed to make changes in the settings.



View end point: Shows or sets the right most chart X range in minutes into the test. When "Keep at end" is checked the value tracks the current end-point.

Keep at end: Automatically adjusts the chart end-point to track the current measured value. When off the user can enter an end-point in minutes.

View starting point: When "Auto scroll" is turned off, the value is the left most edge of the chart. When turned on the value controls a moving window i.e. last 60 minutes of test data.

Auto scroll: When turned on, set the value to the maximum view size. When off set the value to zero to see the complete test.

Generally the "Keep at end" is checked, "Scale time min" is set to 0, and "Auto scroll" is not checked. This will allow viewing the full test period.

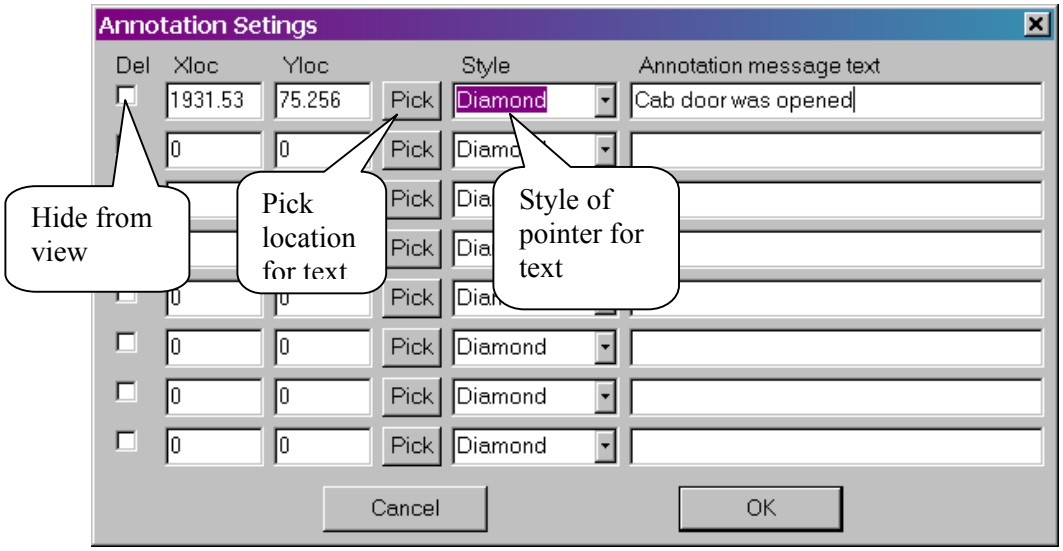
Note: As more data values are collected the left side may "pull away" from the chart edge. Additional samples are needed in the view to fill this area. Click on the Refresh (green round button) to fill in the missing samples. Once a minute the view will refresh automatically without pressing the refresh button.

To "freeze" the trend (stop updates) turn off the "keep at end" check box. This can be helpful when customizing the view for printing. When unfrozen the trend will update to the current readings. No trend information will be lost.

Chart Annotations

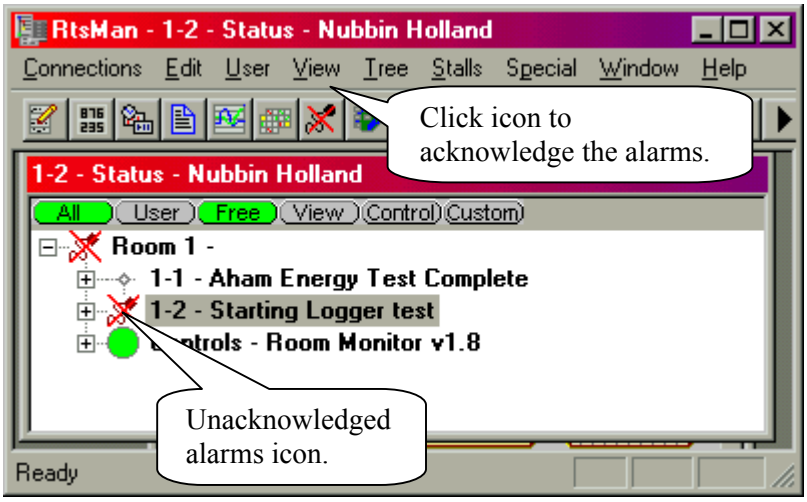
Chart annotations allow inserting text directly onto the plot to note test events or other information for printing on the final reports. Annotations can be located at any position on the plot. When added the annotation will appear on other managers currently viewing the trend.

To add or edit the annotation click on the "Anot" button located in the graphic located in the upper left corner of the trend view. The following dialog is displayed.

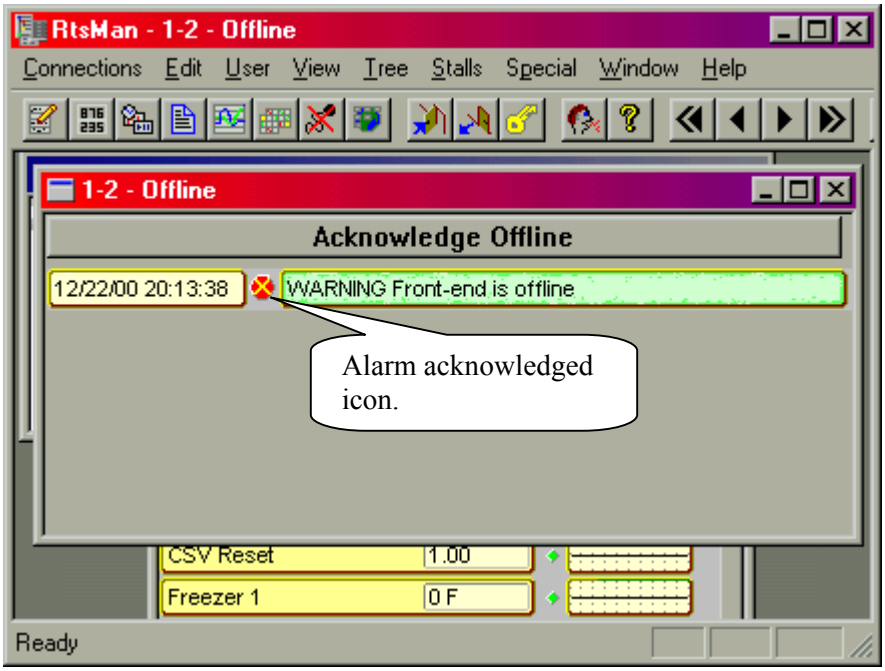


Offline Channels

When inputs channels are out of range or open TC's occur messages are added to the offline view. When unacknowledged messages need reading by the user, the stall status icon changes. First select the stall from the status view then open the Offline view window.

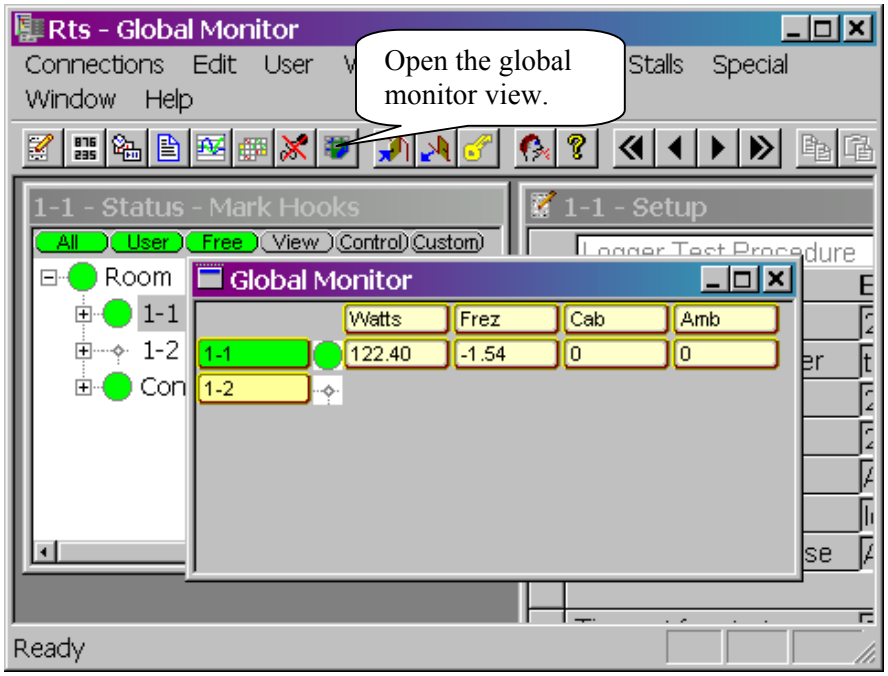


The Offline view displays the list of alarms that are acknowledged and unacknowledged. After acknowledging the alarms the X icon changes. The time into the test is also included with the messages.



Global Stall Monitor

This view provides a list of all stalls with one or more values and the status icon. The view allows the user to keep track of multiple stalls at the same time. The number of values and the point numbers are listed in the system configuration.

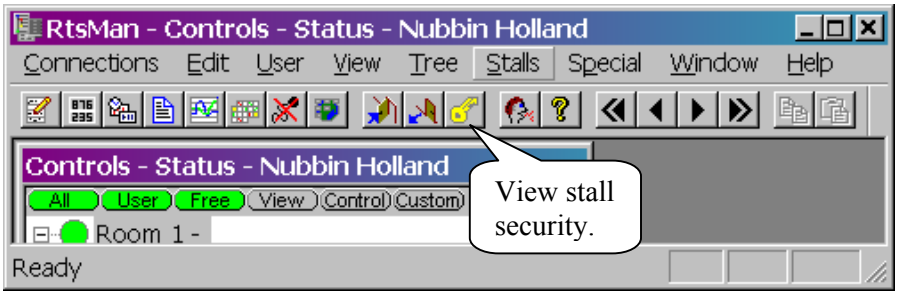


The contents of this view will also depend on the current User Views setting. Refer to the User Views section for more detail.

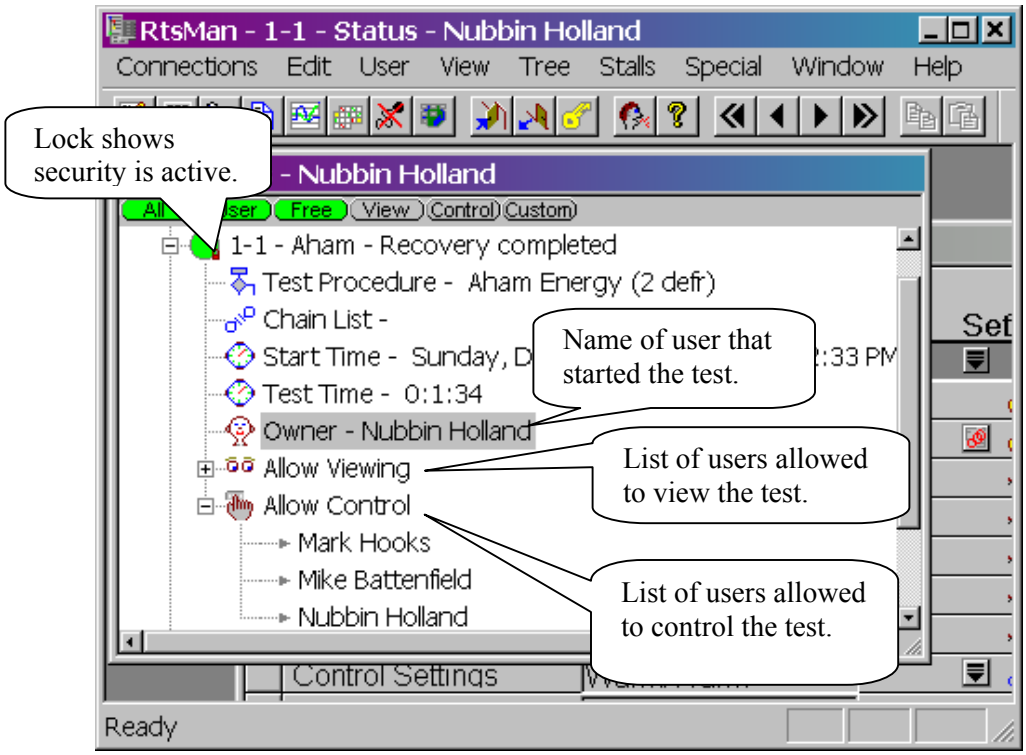
The global view is not effected by the current selected stall in the Status view.

Stall Security

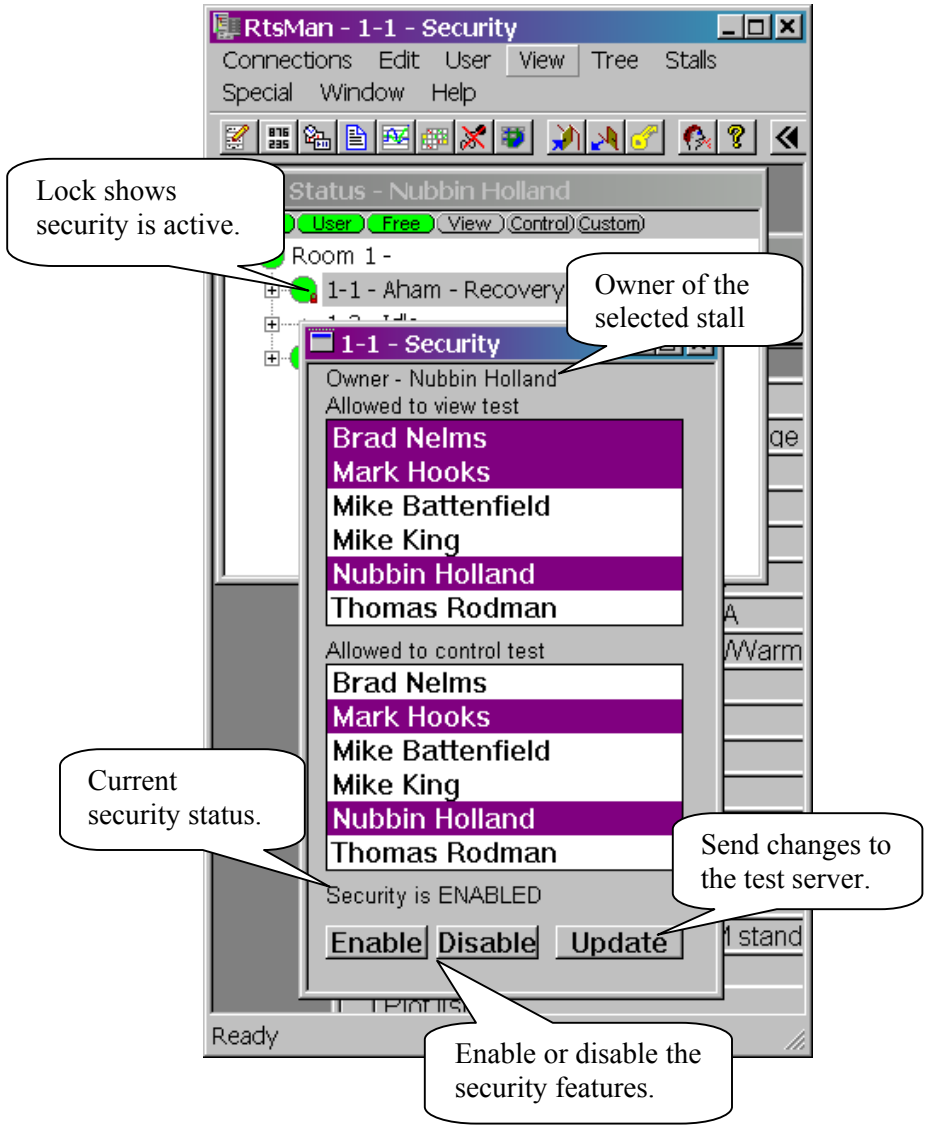
Each stall can be secured by the user to prevent viewing or control by other users. You must be the owner of the stall to make changes to the security settings. To access security first start the test on a stall then select the “key” in the tool bar.



The security view selects users allowed to view and/or control the test. The security can also be enabled or disabled from the security dialog.



The security view lists all users allowed to view or control the test. Only the owner of the test is allowed to make changes to the settings. First enable the security before making changes to the user lists. After making changes to the list settings, press the Update button to send the settings to the server. The owner of the test will always be selected in both lists.

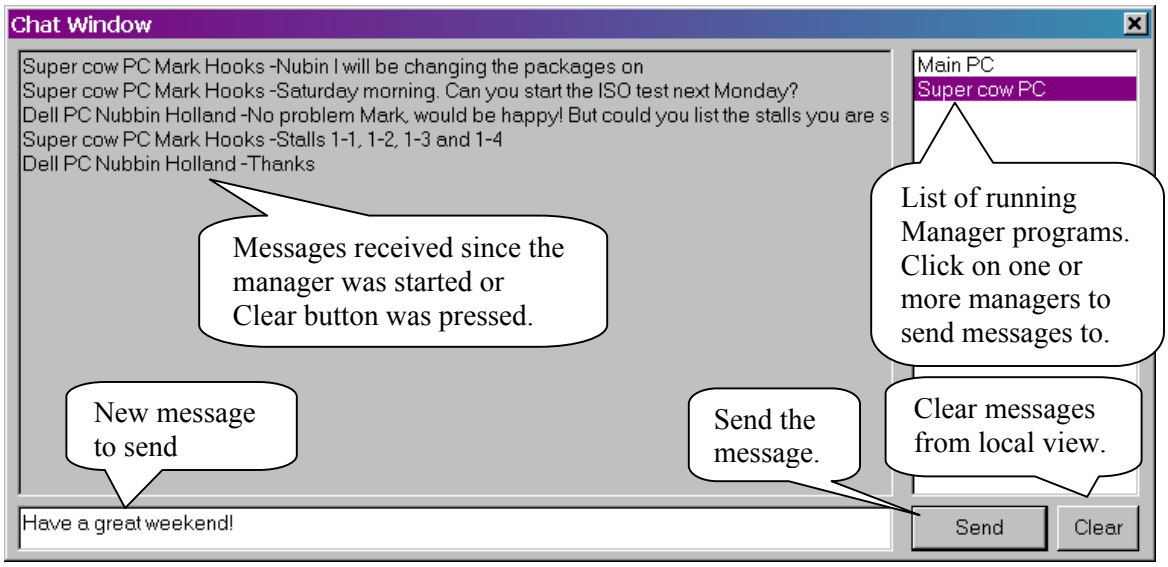


Note : Additional security can also be applied on a per PC basis. This can be used to prevent any control from selected PC's on the network. Each PC is assigned an ID number that is controlled from the test server. Refer to the configuration documentation for more information.

Chatting With Other Users

The manager program provides a chat window for sending messages to other running manager programs. This feature is useful for communicating with engineers located in other area of the plant or at distant locations over the Wide Are Network (WAN).

First select the other managers to communicate with, next type a message for sending. Press the Send button to transfer the message. The source PC name and user name are automatically added to the message.



Note : Messages can only be send to other running manager programs. Old message information is not saved when the manager is stopped.

In Case of Trouble

The RTS Manager was designed and tested over many years and should be extremely stable after proper installation. Due to changes in the plant network, operating system or other unforeseen condition, the manager man not work correctly. This section describes a few possible problems and solutions. If the problem persists please make note of all details and send an email to H&A for analysis.

Always check the manager error log for details on the nature of the problem. From the manager main window select View and Error Logs. A dialog will be displayed with a list of any problems or status messages.

When starting the manager a message is displayed that files are missing:

The manager program is normally run over the network. This requires one or more network connections to the test server PC and possibly other file servers. If you are not properly logged onto the network the files can't be accessed.

In most installations the runtime libraries (DLL) are copied to the local PC to speed program loading. If one or more of the files are missing the manager won't start. Contact your system support personnel to correct the logon or copy the required files to the client PC.

No rooms or stalls are displayed in the status view:

The manager program is normally run over the network. This requires one or more network connections to the test server PC's. If you are not properly logged onto the network the servers can't be accessed.

RTS uses the TCP/IP network protocol for data transfer. The network drivers must be installed correctly and a proper address in use.

The PC's registry is used to store configuration information for each remoter test server. The registry entries include the names of the test servers and other communication settings. Refer to the RTS configuration manual for the proper registry settings. Generally a registry setting file will be located on the server that contains all the required values. This file can be run on the client PC to configure all required settings.

