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Note to all Plus Sine Users: This help file has been developed to allow you to find information quickly and easily WHILE YOU ARE WORKING IN THE PROGRAM; therefore making Plus Sine a valuable tool to "beginners" and "professionals"! Due to the detailed nature of the information, the help file has been through many revisions, and we feel that it is still a "work in progress". Therefore, 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 help file, we will send you a Free Plus Sine T-shirt (while supplies last!).

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Plus Sine Overview

Plus Sine by IntrinsicNet is a simple, user-friendly PC-based remote control and data acquisition system used with the reliable, dependable, and affordable Sine Systems RFC series. By partnering the latest innovations in computer software technology with the excellent reputation of Sine Systems, Plus Sine is designed to meet the changes and challenges of the broadcast industry today. The Plus Sine can be purchased with a new Sine Systems Remote and it is backwards compatible with the existing RFC units.

Flexible Site Control

Managing remote sites has never been more flexible. The Sine System's proven telephone interface using DTMF tones using a landline or cell phone will still be available. But with Plus Sine, you can use the familiar windows-based operations and the intuitive graphical user interface (GUI) to view and command your remote control to perform both simple and complex operations. You create your own customized "Overall View" displaying the most important information using angular and linear meters. And, access to real-time data is as close as a point and click from our PC, laptop, smart phone or PDA. Using simple macros that you create, Plus Sine will control not only your transmitter, but also our other on-site ancillary equipment such as generators, back-up transmitters, satellite receivers, etc.

Total Communication

Communication between your remote site and station personnel has never been easier. Plus Sine allows you to set up paging groups to receive pages, text messages or e-mails depending on the situation Plus Sine is reporting. More than one group can be designated, so that all personnel will not be alerted of every situation. Whether dealing with an off-the-air situation, a dead air message or just receiving a "checking in" message, Plus Sine will keep you informed of what you need to know about.

Comprehensive Information Management

Detailed data acquisition logging is managed by the parameters that you establish and customized reports can be accessed immediately or sent to you via scheduled e-mails in the format of your choice such as PDF, FRF, Microsoft Word Files, etc. Viewing your data is simple using real-time trend charts where you can view multiple analog or status channels at once and see their time relationship to each other. Data collection and reporting is only limited by your hard drive space, so you can keep information and activity records as well as review performance history almost indefinitely.

Easy Installation

Installing the additional hardware to your Sine Systems RFC unit and relay panel takes just a matter of minutes. By connecting two serial cables to your PC and installing your software, you are up and running. Several demonstration databases are available that you can customize to your particular site in order to decrease configuration time. Or you can use the flexible windows-based features to create your own site configuration. You can even download the Demo copy of Plus Sine from the Internet,

configure your site, check macro logic, and use this when installing Plus Sine at your site.

Personal Growth

Though the Plus Sine is a very simple, basic system designed to easily manage a single site, you have the potential to grow your system to meet your more advanced individual needs. Advanced features like the ability to operate multiple message boards, have RS232 control of ancillary equipment, monitor EAS systems and even manage multiple sites over large geographical regions from a single control point are available through the parent product of the Plus Sine, The Hawk Remote Site Management System. The Hawk Remote is the proven "engineer-in-a-box" that has been PC based for over 15 years. Written originally in an MS DOS version, The Hawk has evolved over the years into a powerful windows based system that has proven to be not only the first but also the most comprehensive PC based remote control on the market today. It has been developed by Olen Booth whose contract engineering company has been combining RF engineering with computer technology for over 25 years while servicing over 100 radio stations in the Southeast.

Easy Channel Configuration Saves You Time - No need to use a jog shuttle wheel to try to find your way. Double click on any meter icon and all parameters related to that channel are available for editing.

Use Your Imagination - Plus Sine and The Hawk will encourage you to use your imagination. Limitations that are Intrinsic to hardware-based systems are not a problem for Plus Sine. Limitations imposed by memory and firmware are not a factor with the software/PC based Plus Sine. Macros, timed events, paging groups, triggers, etc. are not limited by hardware. The number of macros supported by The Hawk Remote is only limited by your imagination.

Plus Sine can overlay meters, status and other objects over any BMP file, which allows you more intuitive control.

Scalability - one RFC-1 with a full compliment of relay panels will deliver 64 analog/status channels and 128 relays. Two RFC units will deliver 128 analog/status channels and 256 relays. A maximum of 10 RFC's can be connected and controlled with The Hawk Remote

No more upgrading your firmware and hoping the current version has corrected the previous version's problems. Plus Sine offers automatic upgrades via the Internet with no re-loading data and no operator intervention.

Plus Sine allows RS232, RS422 and TelNet device control of ancillary equipment. For example, you can switch the channels on your Star Guide receiver or other RS232 controllable devices.

After using this new remote, you will see that Ultimate Control + Classic Reliability = Plus Sine.

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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.

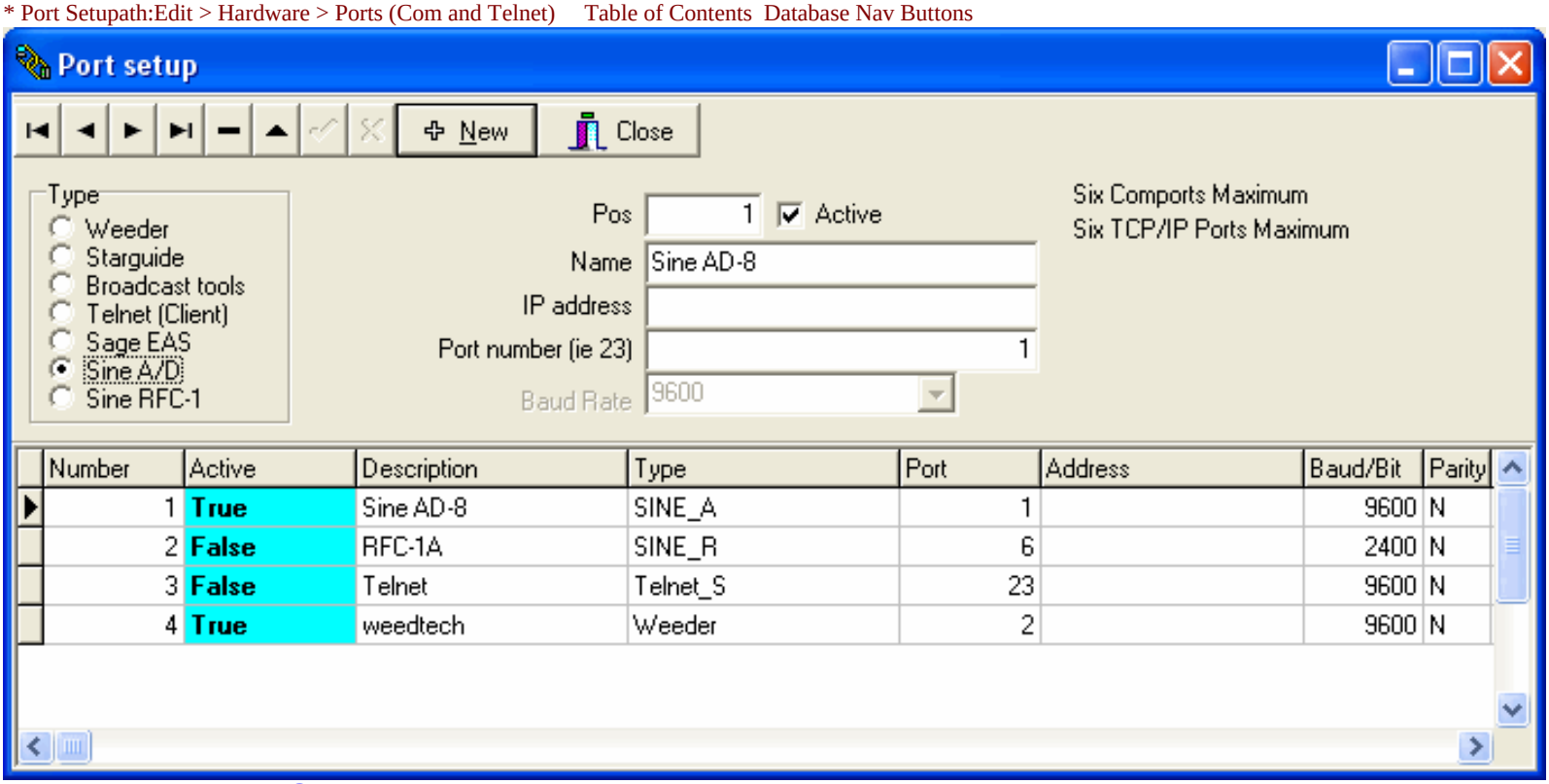

Cancel

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.

* Port Setupath:Edit > Hardware > Ports (Com and Telnet) Table of Contents Database Nav Buttons

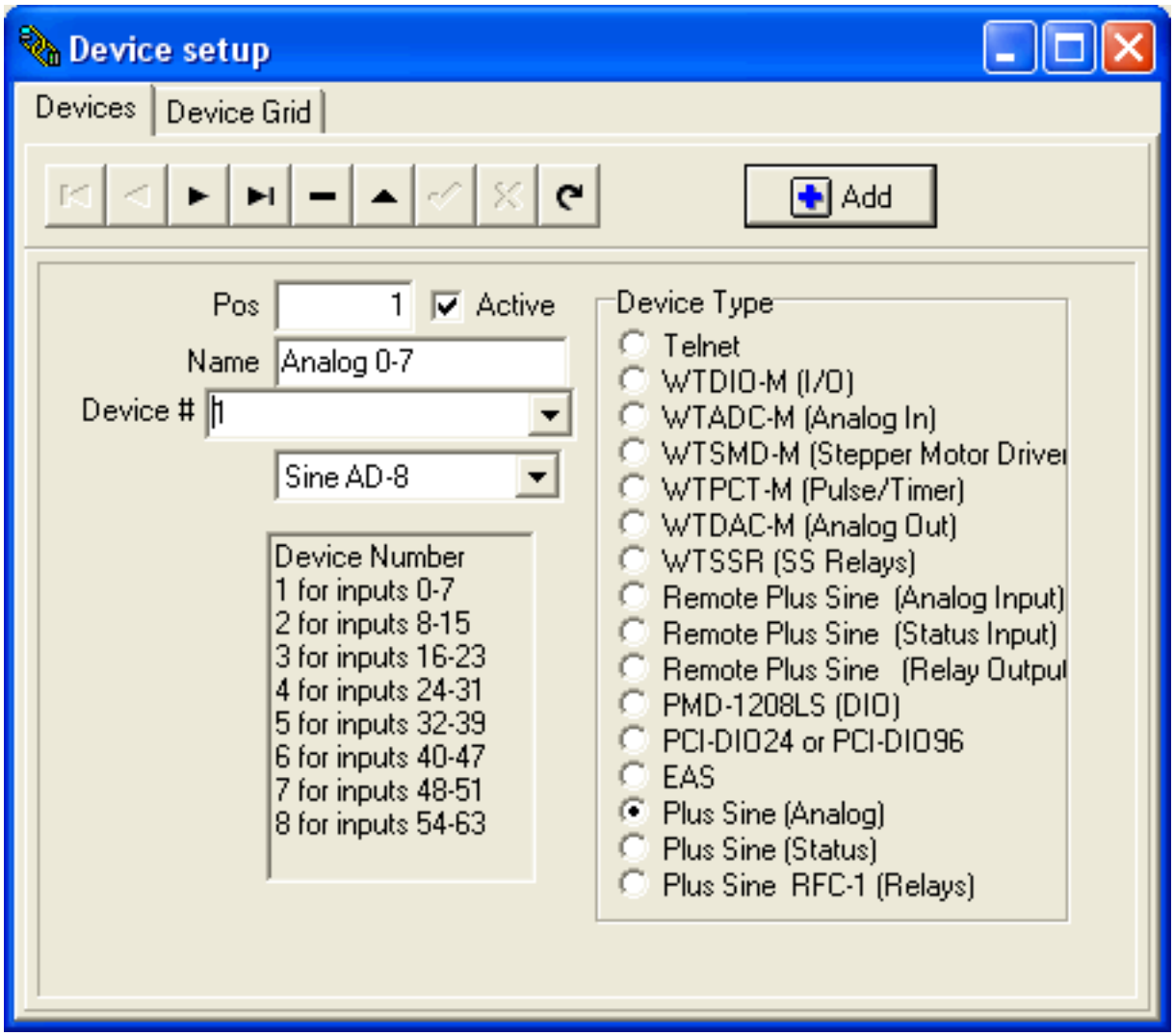


How to Create a Port

Use the following pull down menus: Edit > Hardware > Ports
Once you have the Port Setup window on your screen, press the **Add** button and a new blank page will appear.
Enter the following fields:

Port Number
Enter the hardware port number found on your computer (*i.e. com1, com2, com3, etc.)*
Port Name Enter a common name that will help you identify the port that you attached to the device (*i.e. Com11 or Rocketport).*
Baud Rate Enter the speed of the comport. The most common speeds are 300, 1200, 2400, 9600, 14400, 19200.
Parity Enter "E" for even, "O" for Odd or "N" for none.
Stop Bit Use 7 or 8.
Port device type
Use to tell Plus Sine software what kind of data to expect to see at this port:
Weedtech Analog, status, and I/O data acquisition modules or relays
Starguide Satellite receivers (Not supported yet)
Broadcast Tools The 2x8 audio router is supported
Telnet (Client) Sends Telnet commands to a Telnet server such as a Site Player
Sine (A/D) This is the Sine AD-8 daughter board that allows Plus Sine to collect analog and status data
Sine (RFC) Connects to the Sine RFC unit's RS232 port to allow Plus Sine to control relays

Port Active
Select this box if the port is functioning correctly, and you want Plus Sine to start polling this port.



How to Create a Device

Adding a device to your computer

1. You must setup the port , before you can setup a device.
2. Press the **Add** button.
3. Enter a device name (i.e. *Ch 0-7 or Ch 8-15) .*
4. Select the device type. After selecting the device, enter the information relating to this type of device.
5. Enter the address and fill in the data in all other fields.

Device Name
Enter a common name you can identify when setting up an analog, status or relay channel. *(i.e. Ch 0-7 or Ch 8-15)*

Port Select
Select the port that this device is attached to.

Address
The address of the device.

Note: You can purchase the Weedtech Option for your Plus Sine to monitor activity at your studio.
If you purchase this option for your Plus Sine, the device address will be determined by the DIP switches on the Weedtech module *(i.e. A, B, C, D, etc.)* Weedtech modules can only be polled if you purchase the Weedtech Option. For more information on options available for your Plus Sine, visit PlusSine.com.

Device Types

Telnet You can purchase the Enterprise Option for your Plus Sine to allow you to interconnect Plus Sine remotes at different locations. For more information on options available for your Plus Sine, visit PlusSine.com.
Sine AD-8 Sine Systems AD-8
Sine RFC Sine Systems RFC-1
EAS You can purchase the EAS Option for your Plus Sine to allow you to monitor as many as 6 EAS encoders/decoders. For more information on options available for your Plus Sine, visit PlusSine.com.

Note: the following device types are Weedtech modules. You can purchase the Weedtech Option for your Plus Sine to monitor activity at your studio. For more information on options available for your Plus Sine, visit PlusSine.com.

WTDIO-M (I/O) Weedtech digital input/output module
WTADC-M (Analog In) Weedtech
WTSMD-M (Stepper Motor Driver) Weedtech
WTPCT-M (Pulse/Timer) Weedtech
WTDAC-M (Analog Outputs) Weedtech
WTSSR (SS Relays) Weedtech

Notes for Weedtech devices: (see Weedtech documentation for more details)

1. You must setup the port , before you can setup a device.
2. The device address will be determined by the DIP switches on the Weedtech module *(i.e. A, B, C, D, etc.).*
3. Connect power to the first module (the one where the DB9 cable connects to the computer).
4. Move jumpers on all other modules to allow power to be fed from the first module.

Device Active

If this box is checked, Plus Sine will send and receive commands for this device. If the device is not attached or if the device is defective, then remove the check for this box, and Plus Sine will not poll or report errors on this device.

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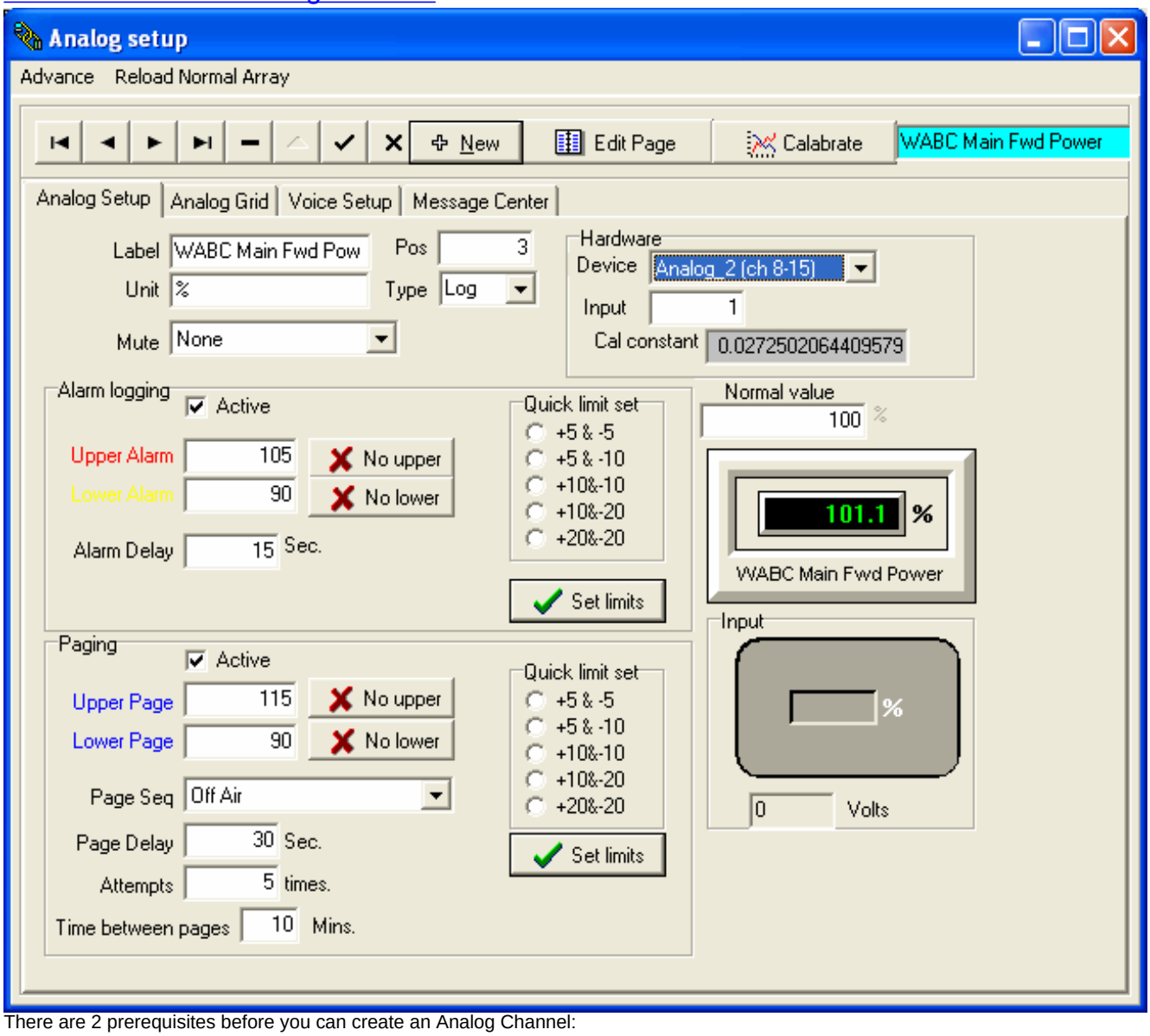
How to Create an Analog Channel



There are 2 prerequisites before you can create an Analog Channel:

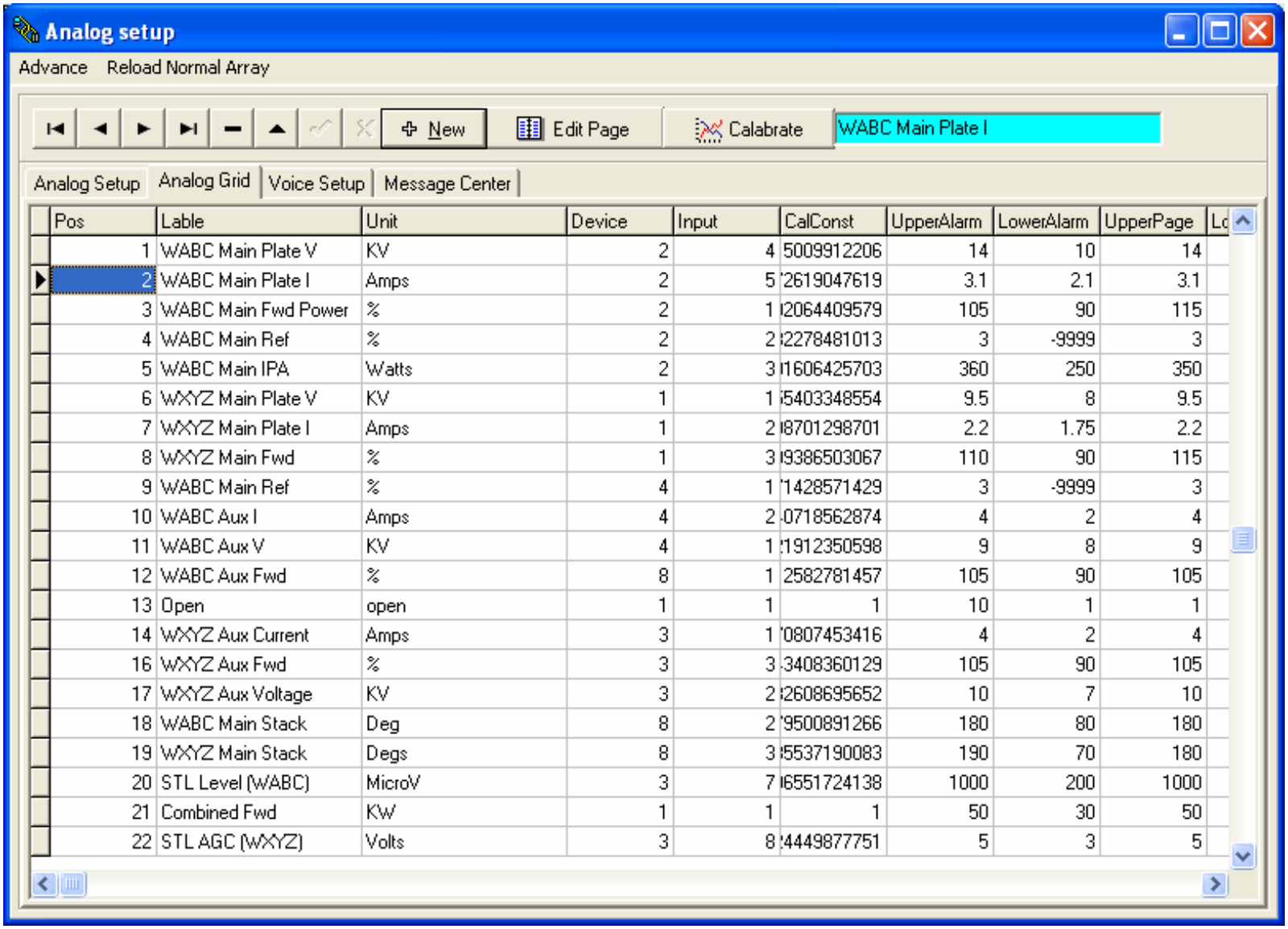
1. Port setup
2. Device Setup

Once you have completed the above, begin with the following pull down menu: Edit > Analog.

Once you have the ~~Analog Setup~~ window on your screen, press the **Add** button and a new blank page will appear.

Analog Grid

A spreadsheet view of the analog records . You can click on the row and edit the data or use this page to select the record you would like to edit. Once the record is selected, click the Analog setup tab to edit the data.



Pos	Lable	Unit	Device	Input	CalConst	UpperAlarm	LowerAlarm	UpperPage	Lo
1	WABC Main Plate V	KV	2	4	5009912206	14	10	14	
2	WABC Main Plate I	Amps	2	5	2619047619	3.1	2.1	3.1	
3	WABC Main Fwd Power	%	2	1	2064409579	105	90	115	
4	WABC Main Ref	%	2	2	2278481013	3	-9999	3	
5	WABC Main IPA	Watts	2	3	1606425703	360	250	350	
6	WXYZ Main Plate V	KV	1	1	5403348554	9.5	8	9.5	
7	WXYZ Main Plate I	Amps	1	2	8701298701	2.2	1.75	2.2	
8	WXYZ Main Fwd	%	1	3	9386503067	110	90	115	
9	WABC Main Ref	%	4	1	1428571429	3	-9999	3	
10	WABC Aux I	Amps	4	2	0718562874	4	2	4	
11	WABC Aux V	KV	4	1	1912350598	9	8	9	
12	WABC Aux Fwd	%	8	1	2582781457	105	90	105	
13	Open	open	1	1	1	10	1	1	
14	WXYZ Aux Current	Amps	3	1	0807453416	4	2	4	
16	WXYZ Aux Fwd	%	3	3	3408360129	105	90	105	
17	WXYZ Aux Voltage	KV	3	2	2608695652	10	7	10	
18	WABC Main Stack	Deg	8	2	9500891266	180	80	180	
19	WXYZ Main Stack	Degs	8	3	5537190083	190	70	180	
20	STL Level (WABC)	MicroV	3	7	6551724138	1000	200	1000	
21	Combined Fwd	KW	1	1	1	50	30	50	
22	STL AGC (WXYZ)	Volts	3	8	4449877751	5	3	5	

Enter your data into the following fields:

Analog Label
The Analog Label is the text that will be displayed on the meter and used as related to other functions. It is the title of the analog channel.

Analog Unit
The Analog Unit is the unit of measurement for a channel. (Example: the unit for Forward Power may be the sign "%" or the word "percent")

Mute
The Mute Function is a way to stop the metering, alarm logging, and paging contingent on a set of rules. *(i. e. If the site has no backup power source and the power goes out, then mute this specific meter channel until power is restored*). Use this to select mute and to assign it to a channel.

Analog Type
"Lin" or Linear**.** The input value exported to Plus Sine responds at the same ratio as the input (*ie if .72 volts = 72 degrees then .85 will = 85 degrees*).

"Log" or Logarithmic**.** The input value exported to Plus Sine responds at an exponential ratio. This is used to convert a linear voltage to produce a logarithmic metering. (*i.e. Use this type if metering power output.*)

Logging

Active
When checked the logging function is enabled.

Upper Limit
If the Analog Channel exceeds the selected value for the selected time set in the Log Delay, a log entry will be made in the Alarm List.

Lower Limit
If the Analog Channel drops below the selected value for the selected time set in the Log Delay, a log entry will be made in the Alarm List.

No Upper Limit
Select the No Upper Limit button, and there will be no upper limit for the log. When you enter a value in the Upper Limit box, logging will be restarted.

No Lower Limit
Select the No Lower Limit button, and there will be no lower limit for the log. When you enter a value in the Lower Limit box, logging will be restarted.

Quick Limits
Use the Quick Limits section as a quick way to assign upper and lower limits. Use this by entering the normal value in the Upper Limit, select the desired range, and click the Set Limits button.

Alarm Log Delay
The amount of time in seconds you want Plus Sine to wait before making an alarm log entry.

Paging

Active
When selected the Paging function is enabled.

Upper Page
If the Analog Channel exceeds the set value for the amount of time set in the Paging Delay, a page will be sent.

Lower Page
If the Analog Channel drops below the set value for the amount of time set in the Paging Delay, a page will be sent.

No Upper Limit
Select the No Upper Limit button, and there will be no upper limit for the paging. When you enter a value in the Upper Limit box the paging will be restarted.

No Lower Limit
Select the No Lower Limit button, and there will be no lower limit for the paging. When you enter a value in the Upper Limit box the paging will be restarted.

Quick Limits
Use the Quick Limits section as a quick way to assign upper and lower limits. Use this by entering the normal value in the Upper Limit, select the desired range, and click the Set Limits button.

Paging Sequence
A list of pagers, cell phones or email accounts to notify if an alarm or event occurs.
Edit/setup Paging Sequence

Page Delay
The amount of time in seconds you want Plus Sine to wait before paging.

Attempts
The number of times you want Plus Sine to send pages on this alarm. The paging will stop when one of the following is achieved:
1. The alarm is cleared.
2. The suspend paging box is checked.
3. All of the pages have been sent.

Time Between Pages
The amount of time Plus Sine will wait in minutes between pages. This will allow someone enough time to correct the problem before the next page is sent.

Hardware

Device
The device setup is where you select the analog I/O device to which you have connected this particular analog meter channel. In a large setup you may have multiple analog I/O devices. This setup lets you define which one will be used for a particular analog channel.

Input
The input on the device where the analog input voltage is connected.

Analog Input Voltage
The input voltage detected at the input device selected. (*Used for trouble shooting and installation*)

Others

Normal Value
The normal input value of a channel. (*Used to calculate quick limits and to get into the simulate mode*) If the output power is normal at 100%, then you input a value of 100%. This is used to set the value in the simulate mode and used to calculate the quick limits. The normal value of a channel is an optional setup and is used in setting quick limits. *For example, if you are metering an STL with a normal output of 1000 microvolts, you*

would enter 1000 for the Normal Value of that analog channel. Now you can use the quick limit function to quickly set limits for the STL channel to plus or minus 5,10, 20, etc. percent of the Normal Value.

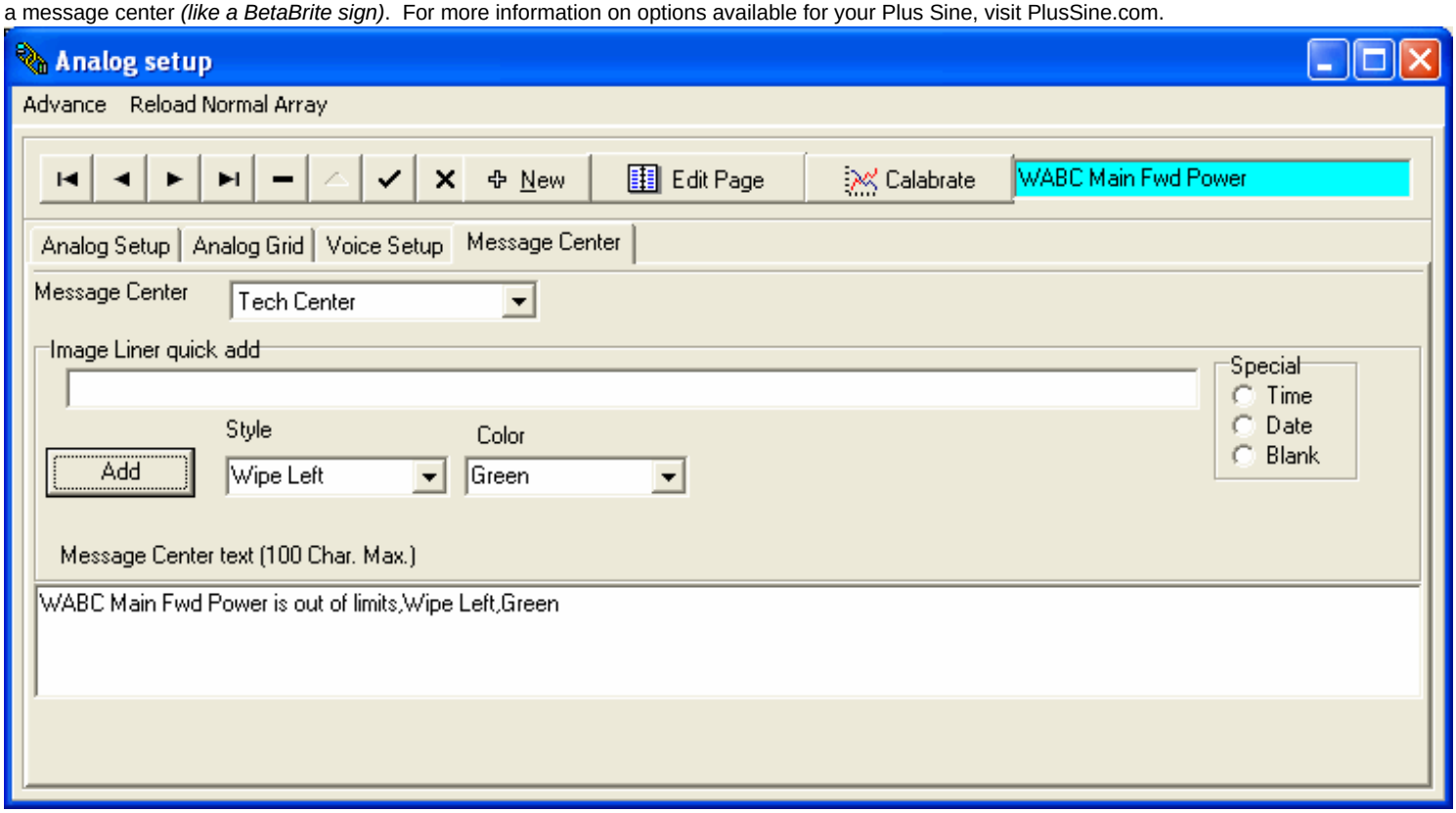
Calibration Constant
This is the value created when the calibrate button is selected. It is used to convert the input voltage to a usable value to be displayed by the metering system. *Note: This is used for trouble shooting and fine calibration.*

Calibration Button
Use this button to calibrate (This *makes the input voltage produce a meaningful reading on the meter*).

Input Voltage (Read only)
Indicates raw DC voltage metered on a particular analog channel. device

Input Value (Read only)
Shows the current value of a channel. *(i.e. If 1 volt DC is the input voltage and the Calibration Constant is 100, then the Input Value equals 100 (1 volt x100).*

Analog Message
Used to set up the message that will be sent to the message center if this channel goes into alarm. Note: This is only used if you have the Message Center Option for your Plus Sine. You can purchase the Message Center Option for your Plus Sine to allow you to display information on a message center *(like a BetaBrite sign)*. For more information on options available for your Plus Sine, visit PlusSine.com.



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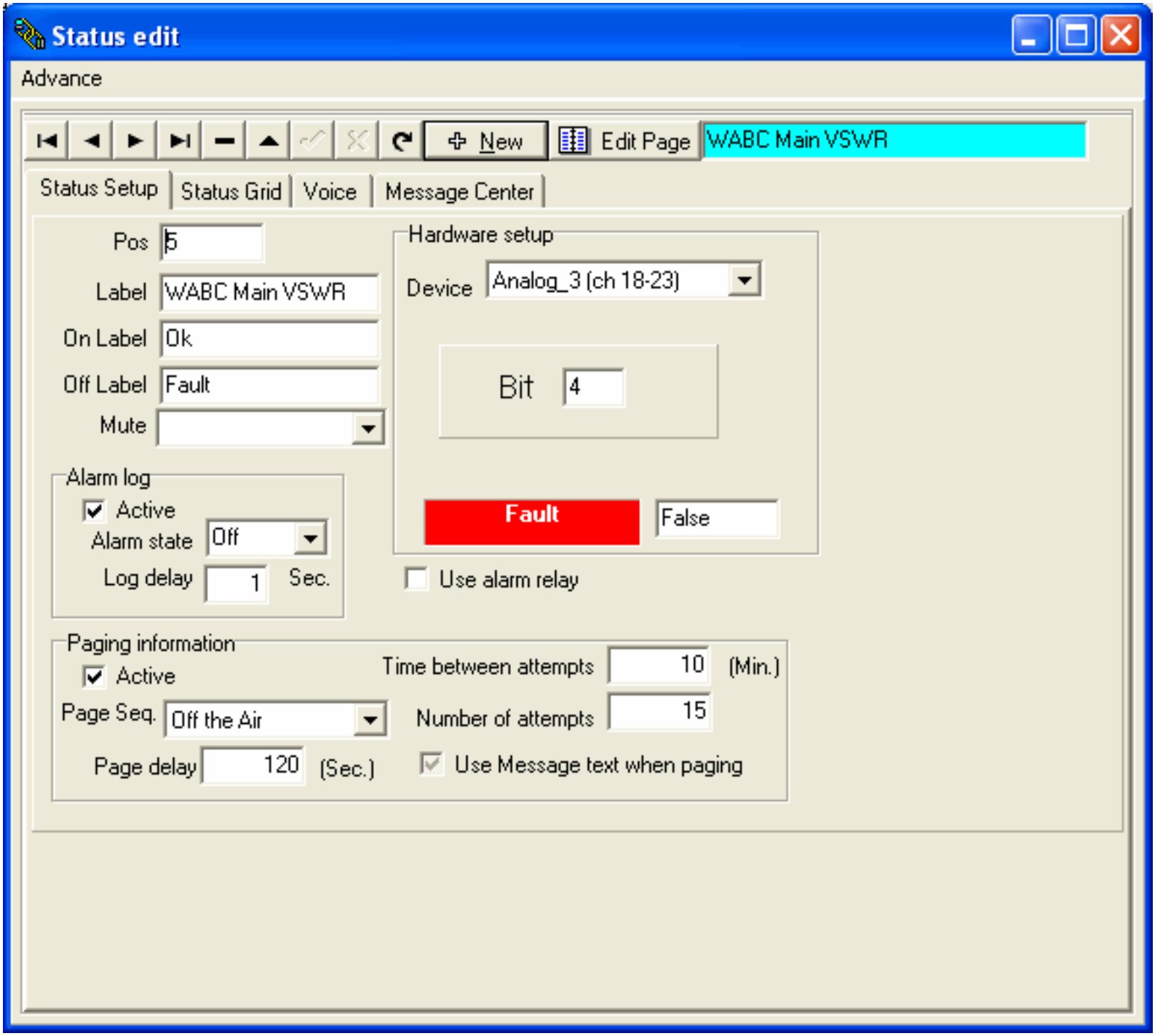


How to Create a Status Channel

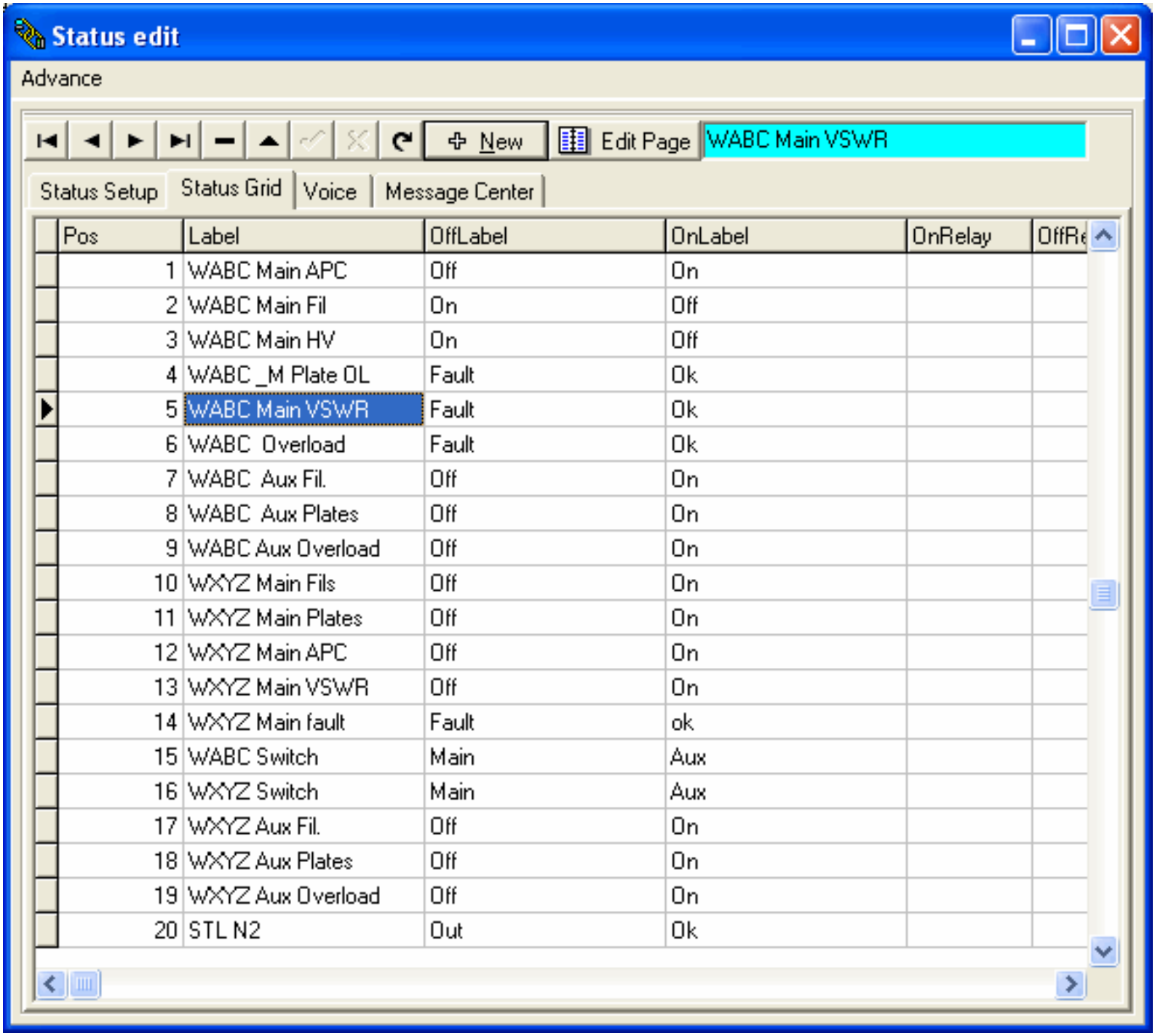
There are 2 prerequisites for creating a Status Channel:
1.Comport setup
2.Device Setup

Use the following pull down menu: Edit > Status

Once you have the-Status Setup window up, press the **Add** button and a new blank page will appear.

Status Grid

A grid or spreadsheet view of the status records. You can click on a row and edit the data, or you can use this page to select the record you would like to edit then click the Status Setup tab to edit the data.



Pos	Label	OffLabel	OnLabel	OnRelay	OffRe
1	WABC Main APC	Off	On		
2	WABC Main Fil	On	Off		
3	WABC Main HV	On	Off		
4	WABC _M Plate OL	Fault	Ok		
5	WABC Main VSWR	Fault	Ok		
6	WABC Overload	Fault	Ok		
7	WABC Aux Fil.	Off	On		
8	WABC Aux Plates	Off	On		
9	WABC Aux Overload	Off	On		
10	WXYZ Main Fils	Off	On		
11	WXYZ Main Plates	Off	On		
12	WXYZ Main APC	Off	On		
13	WXYZ Main VSWR	Off	On		
14	WXYZ Main fault	Fault	ok		
15	WABC Switch	Main	Aux		
16	WXYZ Switch	Main	Aux		
17	WXYZ Aux Fil.	Off	On		
18	WXYZ Aux Plates	Off	On		
19	WXYZ Aux Overload	Off	On		
20	STL N2	Out	Ok		

Enter the following fields:

Status Label
This label is the text that will be displayed on the Status Indicators and used as related to other functions.
On State
The label that will be displayed when the Status Input is low.
Off State
The label that will be displayed when the Status Input is high.

Device Select
Selects the device that will be attached to this channel. See device for more information.
Device Bit
This is the input of a device. Most devices have ether 8 or 16 inputs. Each input channel is addressed as a Bit.

Logging

Active
When this is selected, the logging function will be enabled.
Alarm State
The state of a status channel that will cause an alarm to be logged or a page to be sent.
Log Delay
The amount of time in seconds Plus Sine will wait before it will make a log entry in the Alarm List.

Paging

Active
When this is selected the paging function will be enabled.
Paging Group
A list of pagers, cell phones or email accounts to notify if an alarm or event occurs. See Edit/setup Paging Sequence for more details.
Log Delay
The amount of time in seconds Plus Sine will wait before sending a page.
Attempts
The number of times Plus Sine will page on this alarm. The paging will stop when one of the following is achieved:
1. The alarm is cleared.
2. The suspend paging box is checked.
3. All of the pages have been sent.

Time Between Pages
The amount of time in minutes Plus Sine will wait between pages. This will allow someone enough time to correct the problem before another page is sent.
Use Alarm Relay
If this box is selected and a signaling device is attached to Plus Sine, then this channel will activate an audible or visible alarm. For more information on signaling, see Setting up Signaling Devices Alarm Relay Tab.

Status Message
Used to set up the message that will be sent to the message center if this channel goes into alarm. Note: This is only used if you have the Message Center Option for your Plus Sine. You can purchase the Message Center Option for your Plus Sine to allow you to display information on a message center *(like a BetaBrite sign)*. For more information on options available for your Plus Sine, visit PlusSine.com.

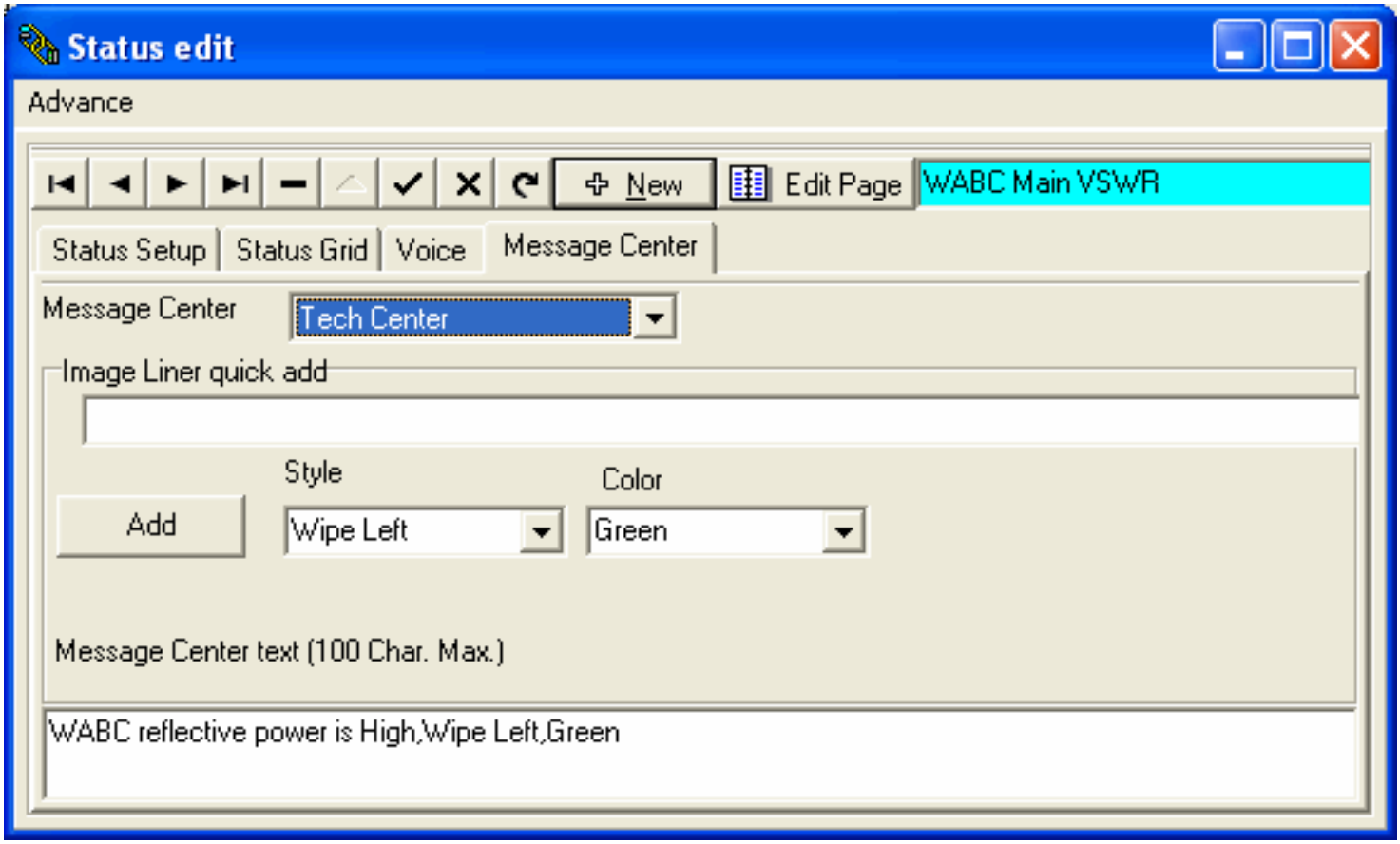
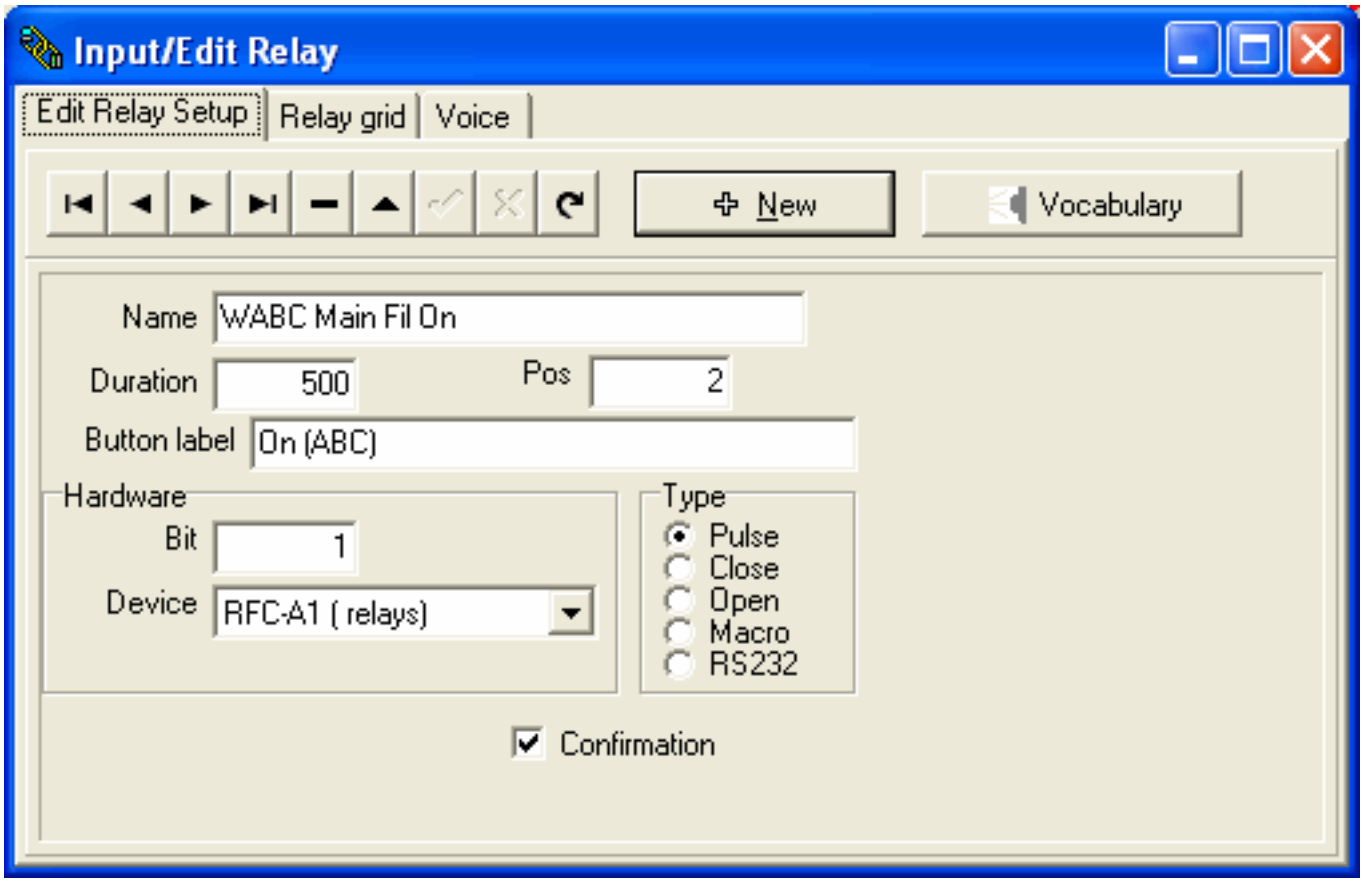

Status edit
Advance
New
Edit Page
WABC Main VSWR
Status Setup
Status Grid
Voice
Message Center
Message Center
Tech Center
Image Liner quick add
Style
Color
Add
Wipe Left
Green
Message Center text (100 Char. Max.)
WABC reflective power is High,Wipe Left,Green

Table of Contents Database Nav Buttons



How to Create a Relay

Prerequisite for creating a Relay Channel:
1.Comport setup
2.Device Setup

Use the following pull down menus: Edit > Relay

When the ~~Relay Setup~~ window is up, press the **Add** button and a new blank page will appear.

Enter the following fields:

Relay Name
Enter the name of the relay that will be displayed on the buttons and macros.
Relay Duration
Enter the amount of time in milliseconds that the relay will be engaged.
Button Label
Enter the name that will be placed on the button on the Button Box page or any Tab

Relay Type:
Pulse
Sets the output high for the amount of time defined in ~~Duration~~.
Close (Not available on Plus Sine)
Sets the output high and is held there until a Open or Pulse is sent.
Open (Not available on Plus Sine)
Sets the output low and is held there until a Close or Pulse is sent.
Macro

Set of commands (see marco commands).

RS232 (Not available on Plus Sine)

Sends data out to a RS232 port.

Note: the duration is only used in the pulse mode.

Output Device

The device that will activate the relay, when a button is pressed or a macro is activated.

Output Bit

Enter the bit that will be pulsed, when the button is pressed or a macro is activated.
For Plus Sine, 1# would be 1 raise and 1* would be 1 lower.

Relay Confirmation

If this box is checked a confirmation box will appear when the user presses a button related to this relay. This is used to prevent accidental activation of a critical relay.

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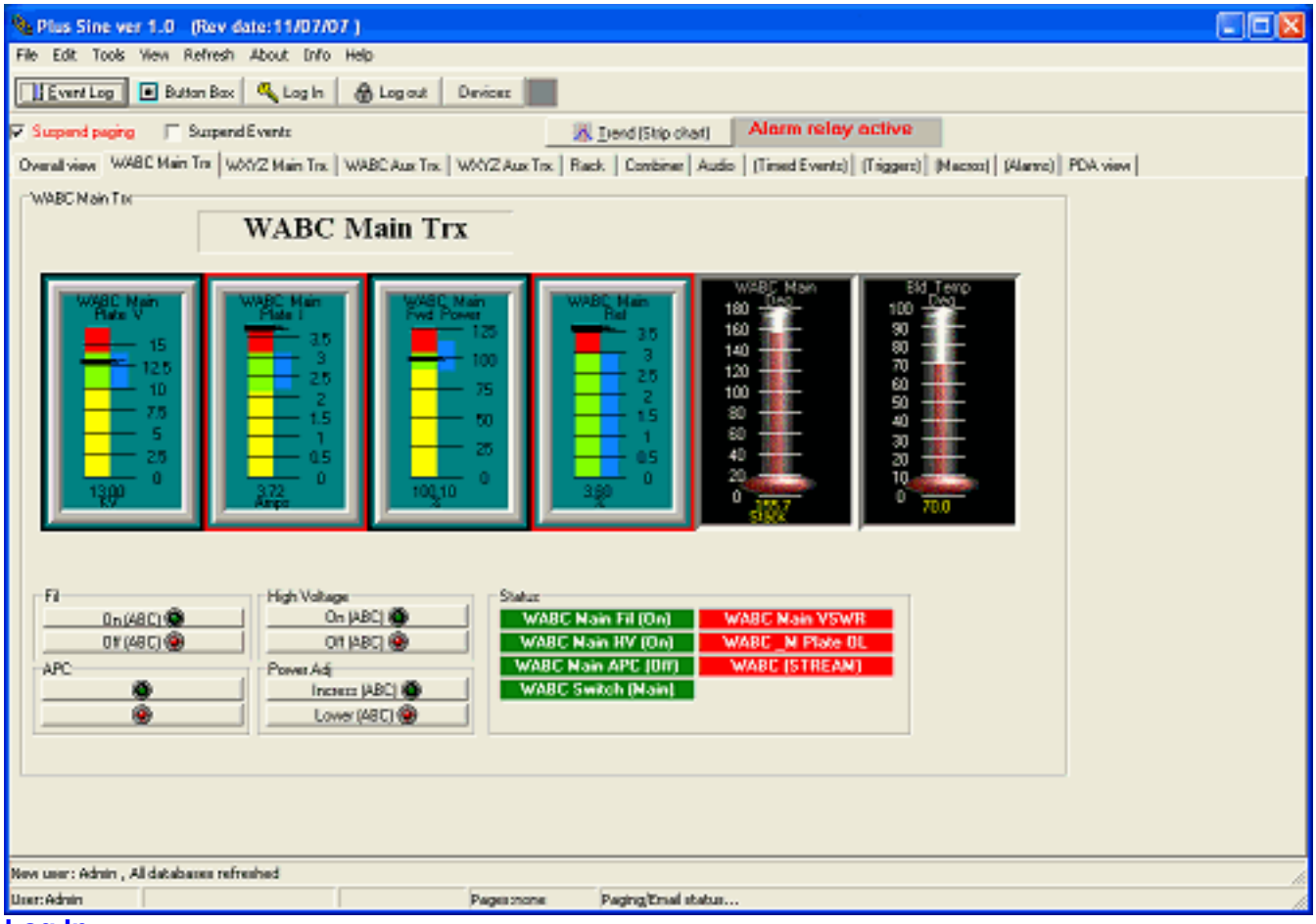
Understanding Tabs

Use the following pull down menu(s) Edit > GUI > Tab Setups

Tab View



Log In

Used to log into Plus Sine. This will allow the operators to control relays and edit setups.
Edit/add users

Log Out

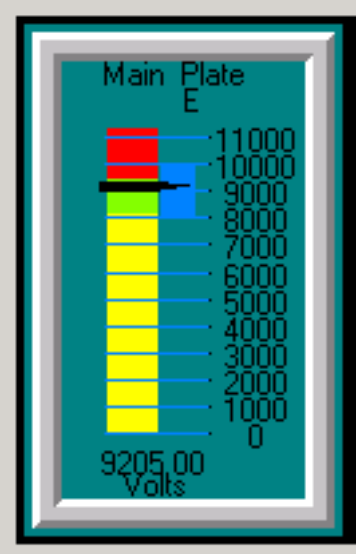
Used to lock Plus Sine. Users can view meters and pages, but will not be able to control relays or edit setup files.
Edit/add users

Device Button

Used to display data about devices and input database files.

Meter Colors

Red. Above the preset logging limit. If the logging box is checked, a log entry will be made.
Green. Normal operating range as related to logging.
Yellow. Below the preset logging limit. If the logging box is checked, a log entry will be made.
Blue. Normal operating range as related to paging. You can set different alarm limits for logging and paging.


Main Plate
E
11000
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
9205.00
Volts

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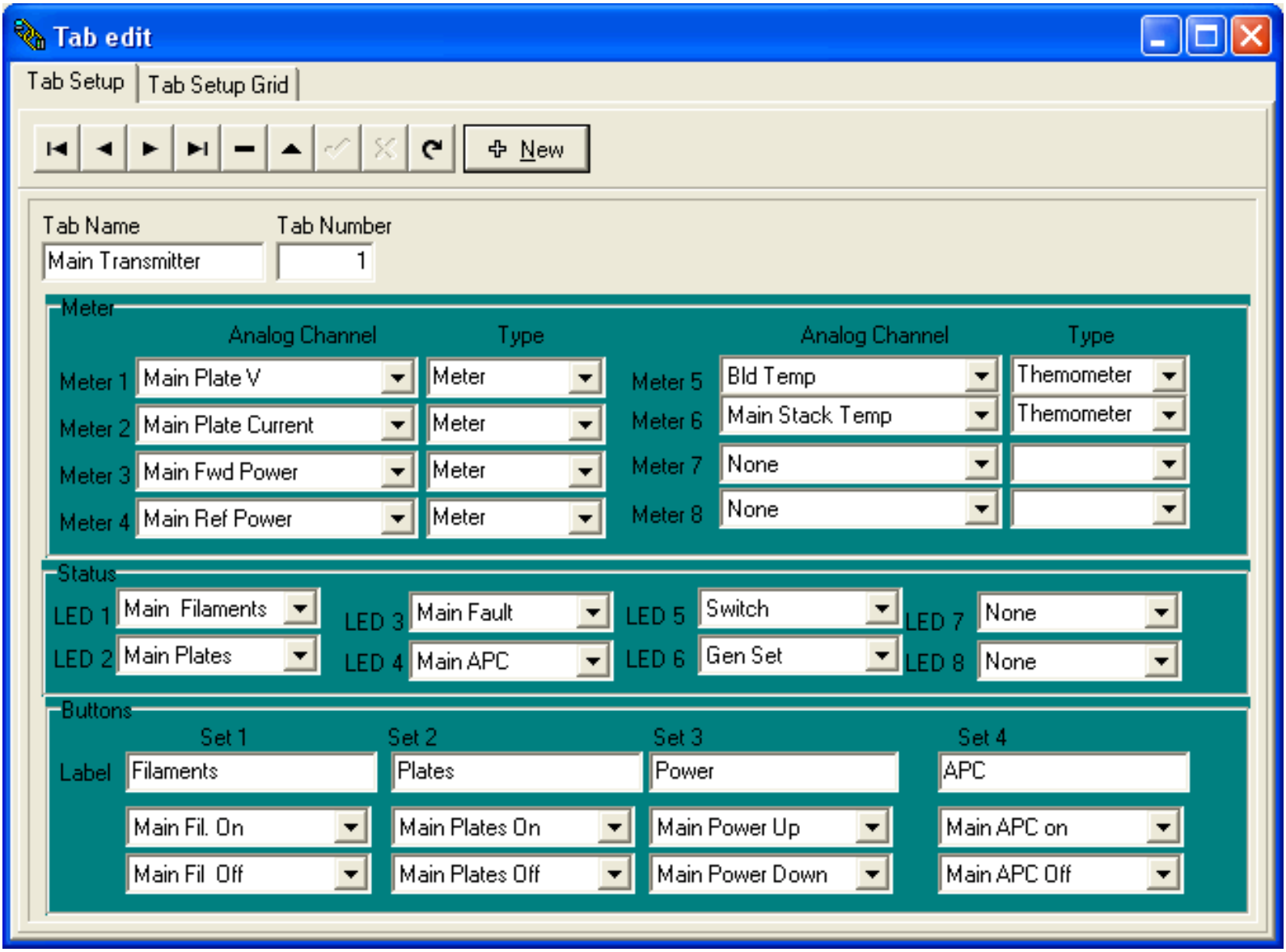
Adding Tabs



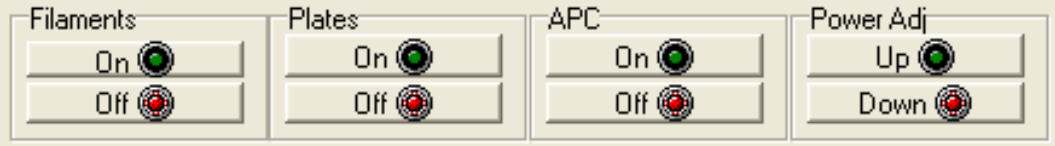
Analog Channel
Used to select the analog meter to be placed on this Tab.
Analog Setup

Meter Type
Use Analog for a vertical analog meter and Temp for a thermostat.

Status Group
Select the status indicators to be displayed on the tab.
Status Setup

Buttons
Used to activate relays that are used to control devices.

Buttons Label



Label The name for the relay set. *(i.e. Plates)*

Buttons Relays
Used to identify the relays on a tab. The relays that go with the label. *(i.e. Plates On)*

Tab Name
The label that will appear on the tab on the main page.

Tab Number
The position of the tab on the main page.
Note: Tab numbers should start at 1 and continue with no gaps in numbering.

* Overall View

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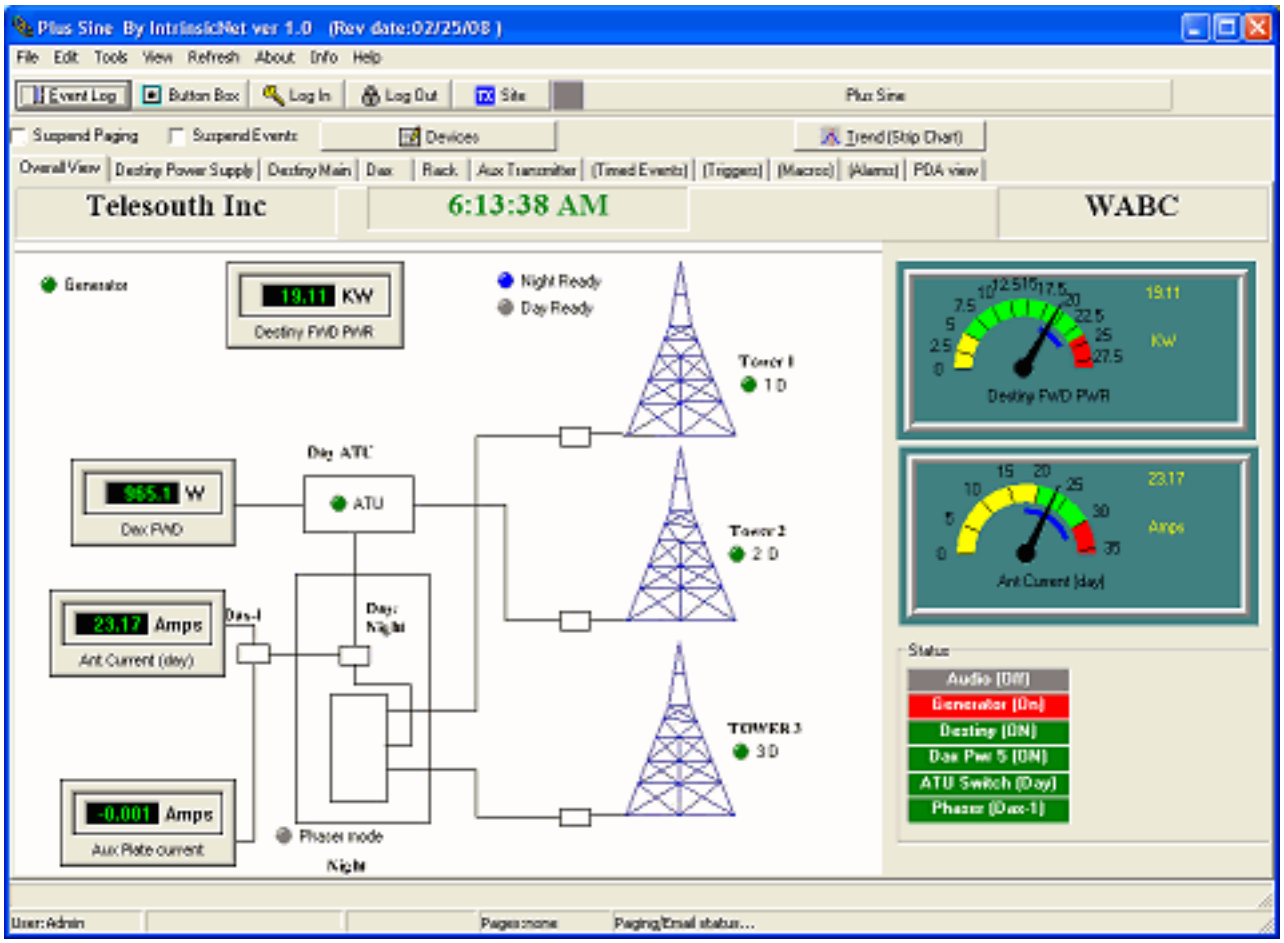
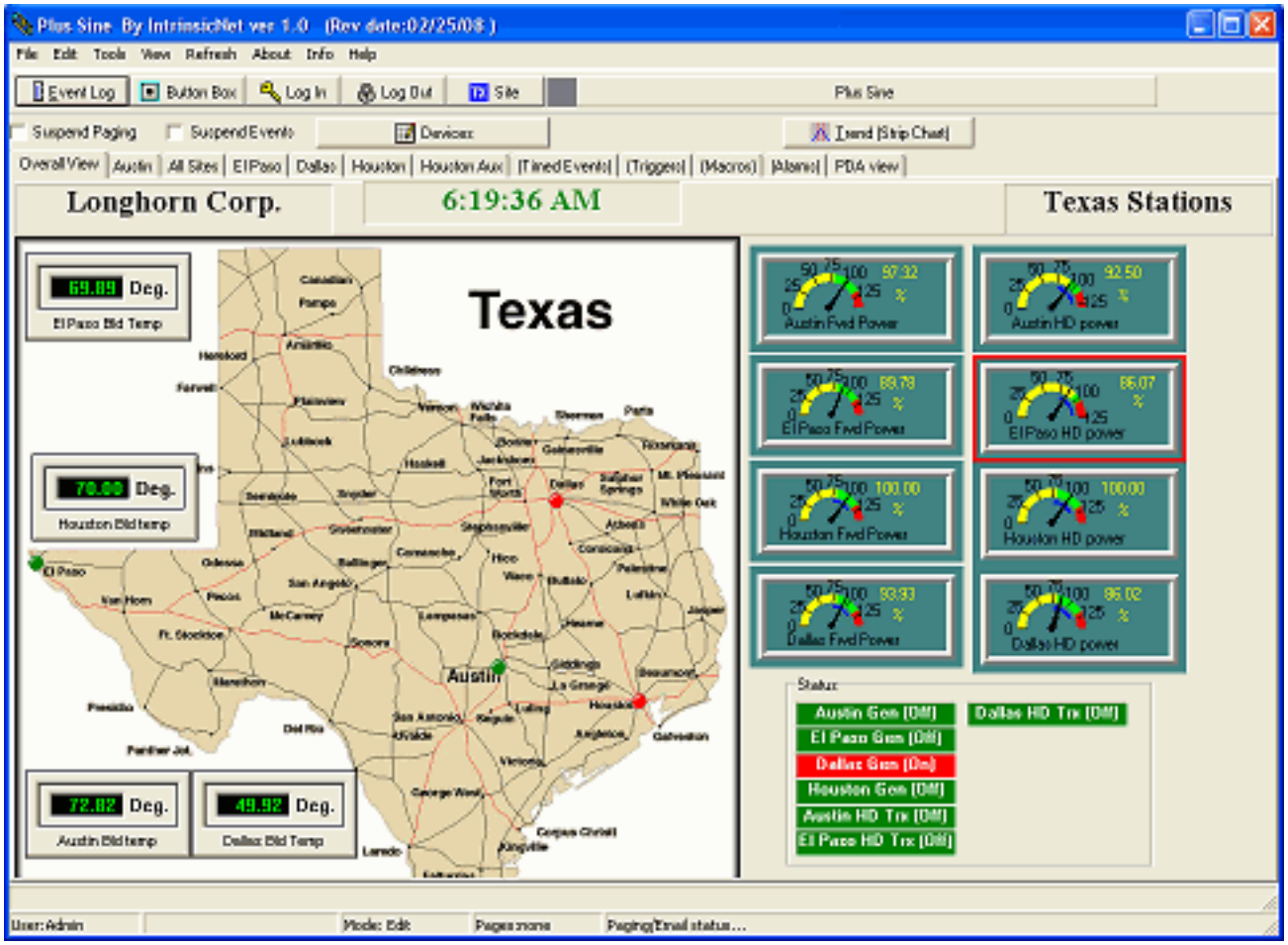
Overall View

AM directional



Texas

* Overall View



The Overall View is the first tab on Plus Sine. The Overall View can contain:
20 Angular meters
10 Linear meters
24 Status indicators
20 LED's

An object can be moved anywhere on the screen by right clicking on the object or using the Overall Edit menu option.

Meters can be sized by right clicking on the object or using the Overall Edit menu option.

A BMP file is used as the backdrop of the Overall View. You can load a BMP for the backdrop by right clicking anywhere on the Overall View page that does not contain an object. Then choose Load.
To select, add, or delete objects, right click anywhere on the Overall View page that does not contain an object and choose Setup.

Note: You can create a BMP file in Microsoft Paint, Autocad or any other program you choose.

Main Tab
Alarm tab
Shows all alarms that are pending and that have cleared.

Timed Event Tab
Shows all timed events. *(Note: Events that have already occured may be already be deleted.)*
Trigger Tab

Shows the status of all triggers.

Macro Tab

Shows all macros and the progress of the macros. A marco may be manually run by selecting the macro and pressing the run button.

Left Header

This is the header on the Overall View. This is also used to identify the site on the pager or email.

Right Header

This is normally used to display the city and state of the station.

Clock

Displays the current time.

Suspend Paging

By checking this box Plus Sine will suspend paging, text messaging, and email.
When not checked, Plus Sine will start paging again.

Suspend Events

When this box is checked:
all trigger events are halted.
all timed event are halted.

Devices

Device Button

Used to display data about devices and to view input database.

Event Log

Event log

Used to view the event logs.

There are 2 types of event logs:
1. Events (logs the users, relays, timed events, triggers, and macros).
2. Errors (a quick list of errors, *i.e. database, hardware, setup*).

Notes: Everything found in the error log is stored to disk in the debug log.
The error log is an easy way to find errors without going through the debug log.
All logs are stored to disk "D:\stations\your stations\logs\..."
Logs are purged based on the "Delete trend and all collected data after" field in the ~~setup page~~
.

Button Box

Button box Button Box Setup

Used to find a page of buttons (relays or macros) quickly without having to click through the page tabs.

Log In

Edit/add users

Used to log into Plus Sine. This will allow the operator to control relays and edit setup files.

Log Out

Used to lock Plus Sine. Users can view meters and pages, but will not be able to control relays or edit setup files.

Trend (Strip Chart) Button

Trend button

A trend (strip chart) is a data acquisition tool used to generate a plot, graph or other visualization of data versus time.
A trend chart is used to monitor either analog or status channels in real time. As many as 8 channels can be recorded at one time. The charts can show the time relationship between the channels. Even though the strip chart can only record 8 channels at a time, Plus Sine keeps a continuous log of all analog and status channels. You can select and change the channels that you want to visualize on the chart at any time.

Angular Meters

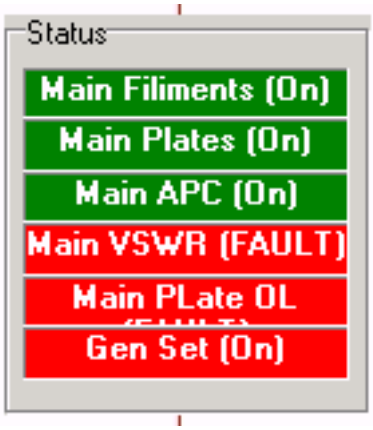
As many as 10 angular meters can be placed on the Overall View. You can add a meter by right clicking anywhere on the page where there is not an object. Then choose Setup. Or you can go to Edit -> GUI ->Overall.
Meter Colors Colors used in the meters located on tabs.

Linear Meters

* Overall View

Linear meters are used on the Overall View. These meters show the channel that is being displayed. As many as 10 linear meters may be placed on the Overall View. You can add a meter by right clicking anywhere on the page where there is not an object. Then choose Setup. Or you can go to Edit -> GUI ->Overall.

Status Indicators

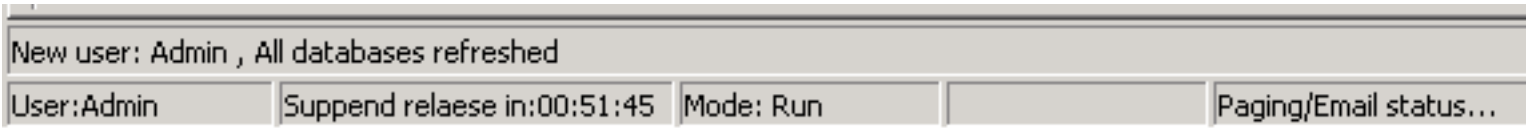


Used to show the status (On or Off) and the alarm state of an input channel.

Colors used in a status alarm state:
Green. Not in alarm
Blue. Alarm pending. The time between going into alarm and logging the alarm. This time is set up using Edit > Status and entering the seconds in Alarm Log Delay.
Red. In alarm and logged.
Gray. Muted
Silver. Plus Sine is not connected to remote site.
Status Setup

LED's

Used to show the status (On or Off) of a channel in LED style.



Current User Edit/add users

Indicates the current user logged into Plus Sine.

Ticker Tape

Shows the last few events that were activated.

Mode

Shows the mode of operation.
Edit. Slows down RS232 polling to reduce system overhead.
Run. RS232 polling is set to full speed.

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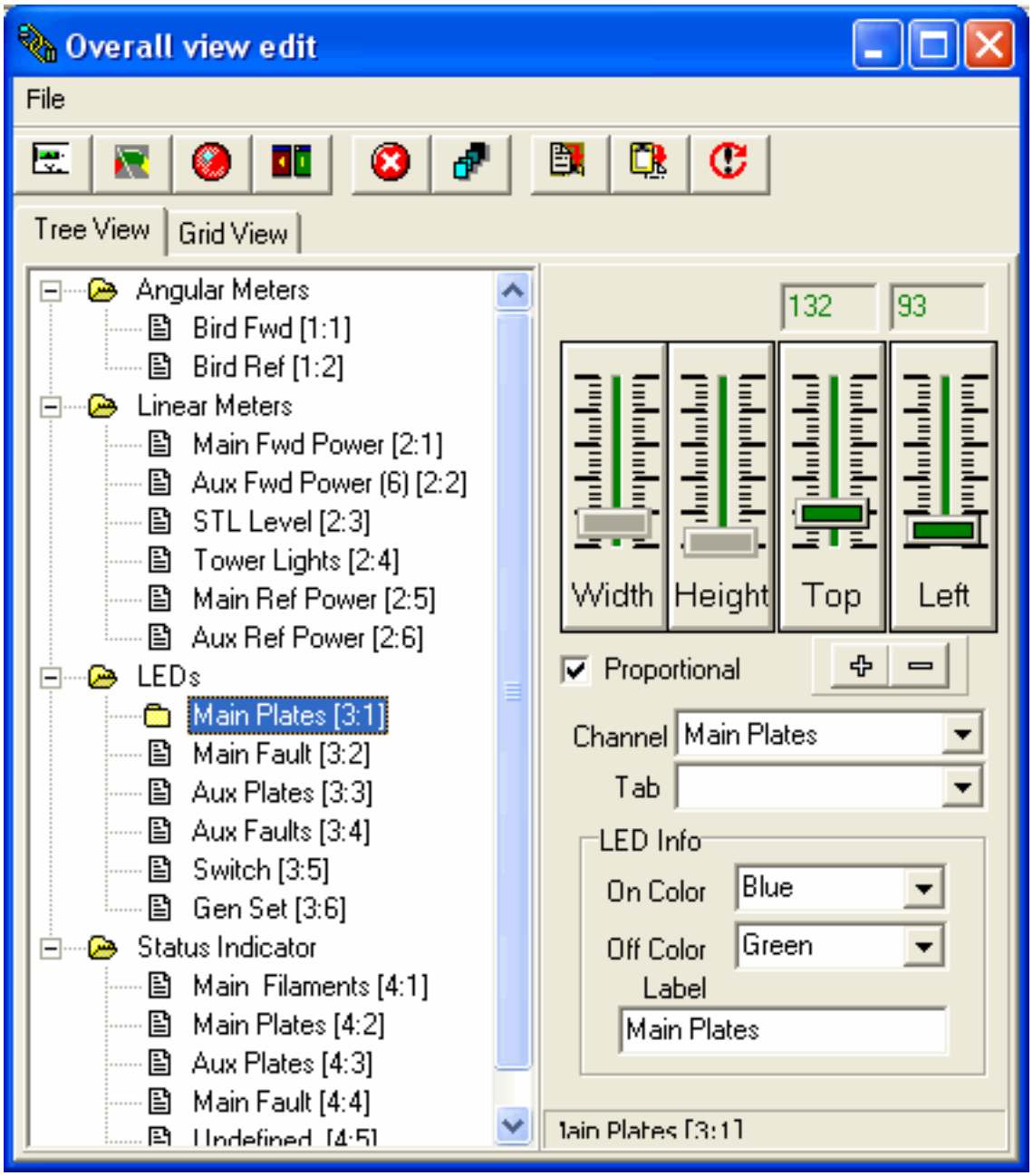
Editing An Object (Overall View)

There are 2 ways to edit an object:
1. Use the following pull down menu(s) Edit > GUI > Overall
2. Right click anywhere on the overall view and use the selections.

When you use the pull down menu(s) Edit > Gui > Overall you get the Overall View Edit tab:



On the Overall View Edit tab use the following icons:

A Add Linear Meter Press to add a linear meter to the Overall View.
B Add Angular meter Press to add an angular meter to the Overall View.
C Add LED Press to add an LED meter to the Overall View (maximum 20 LED's)
D Add Status Indicator Press to add a status to the Overall View.

E Delete Item Press to delete the item selected in the item list.

F Collapse All Press to close all the object folders.

G Copy Width and Height

Copies the height and width of the selected object. When you select another object and choose the Paste Width and Height button, then the object will be re-sized to match the height and width of the first object.

H Paste Width and Height

Used to past the width and height of the last object (where the Copy H & W button was used) onto the currently selected object .

I Refresh Overall View

Press to refresh all elements on the Overall View and force all changes to take effect.

Channel

Press to select the analog or status channel that the settings are going to be attached to. After you the select the channel, when you click anywhere else on the page, all edits are updated on the Overall View.

Tab

Used to select the tab to jump to if you double click on this meter.

LED On Color

Used to select the color that the LED will turn to when the attached status channel is in the "on" state.

LED Off Color

Used to select the color that the LED will turn to when the attached status channel is in the "off" state.

Proportional

Used to make the width and height at a 2:1 ratio.

Plus Icon

Used to allow you to increase the value of the last slider click by a rate of 1 pixel at a time.

Minus Icon

Used to allow you to decrease the value of the last slider click by a the rate of 1 pixel at a time.

LED Label

Press to attach the label that will be displayed below the LED.

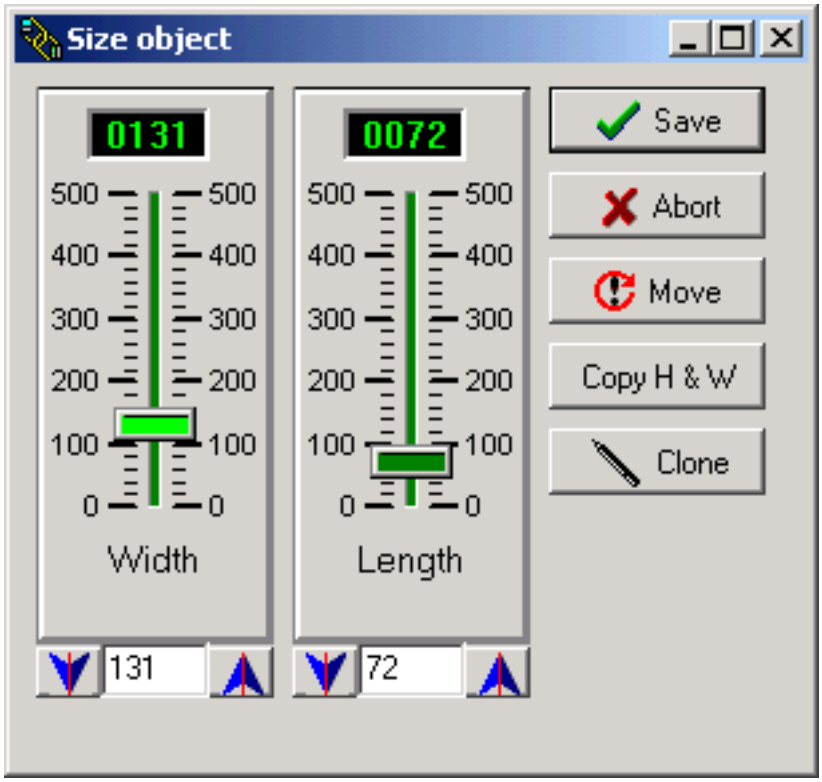
If you Right click on the object, you can select Setup, Size or Move

Setup

This takes you to the Overall View Edit as described above.

Size

If you select Size, then edit using the following:



Abort

Used to exit when you do not want to save the resize.

Copy H & W (Copy Height and Width)

Copies the height and width of the selected object. When you select another object and choose the Clone button, then the object will be re-sized to match the height and width of the first object.

Clone

Used to clone the selected object to the size of the last object where the Copy H & W button was used.

Proportional

Used to make the width and height at a 2:1 ratio.

Decrease Width Used to decrease the width of an object by making small changes.

Increase Width Used to increase the width of an object by making small changes.

Decrease Length Used to decrease the length of an object by making small changes.

Increase Length Used to increase the length of an object by making small changes.

Note: Remember, there are 2 ways to edit the size of an object:

1. *Edit > Gui > Overall and then select the Copy Height and Width Icon at the top (see description above).*
2. *Right click on the object and select Size*

To Move an Object on the Overall View

Select the object and drag it to its new location. A green shadow will track your mouse to show the progress of your move. When you release your left mouse button, the object will move to the new location.

To Save an Edited Object

Click the Save Changes button that appears at the top of the page

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How to Create or Add a Background BMP File to the Overall View

You can create a BMP file in Microsoft Paint, Autocad or any other program you choose. Once the BMP file is created, then go to the overall tab and right click and select **Load.** A browser will pop up. Browse the folder your BMP file is stored in and click **OK**.

The BMP will now be displayed on the Overall Page. Right click anywhere on the Overall tab and select Setup to create or move objects.

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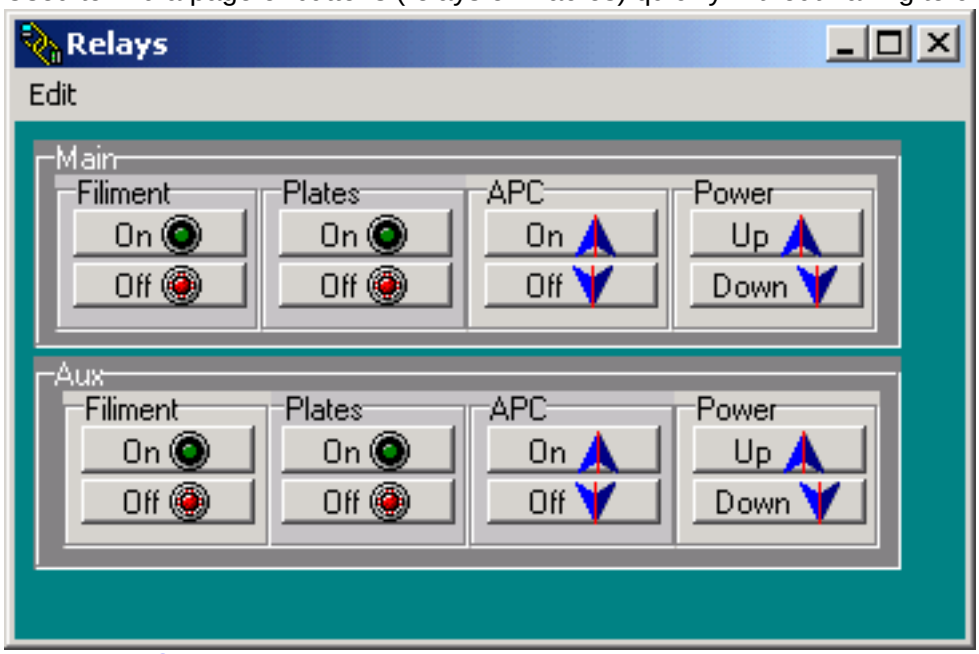
Button Box

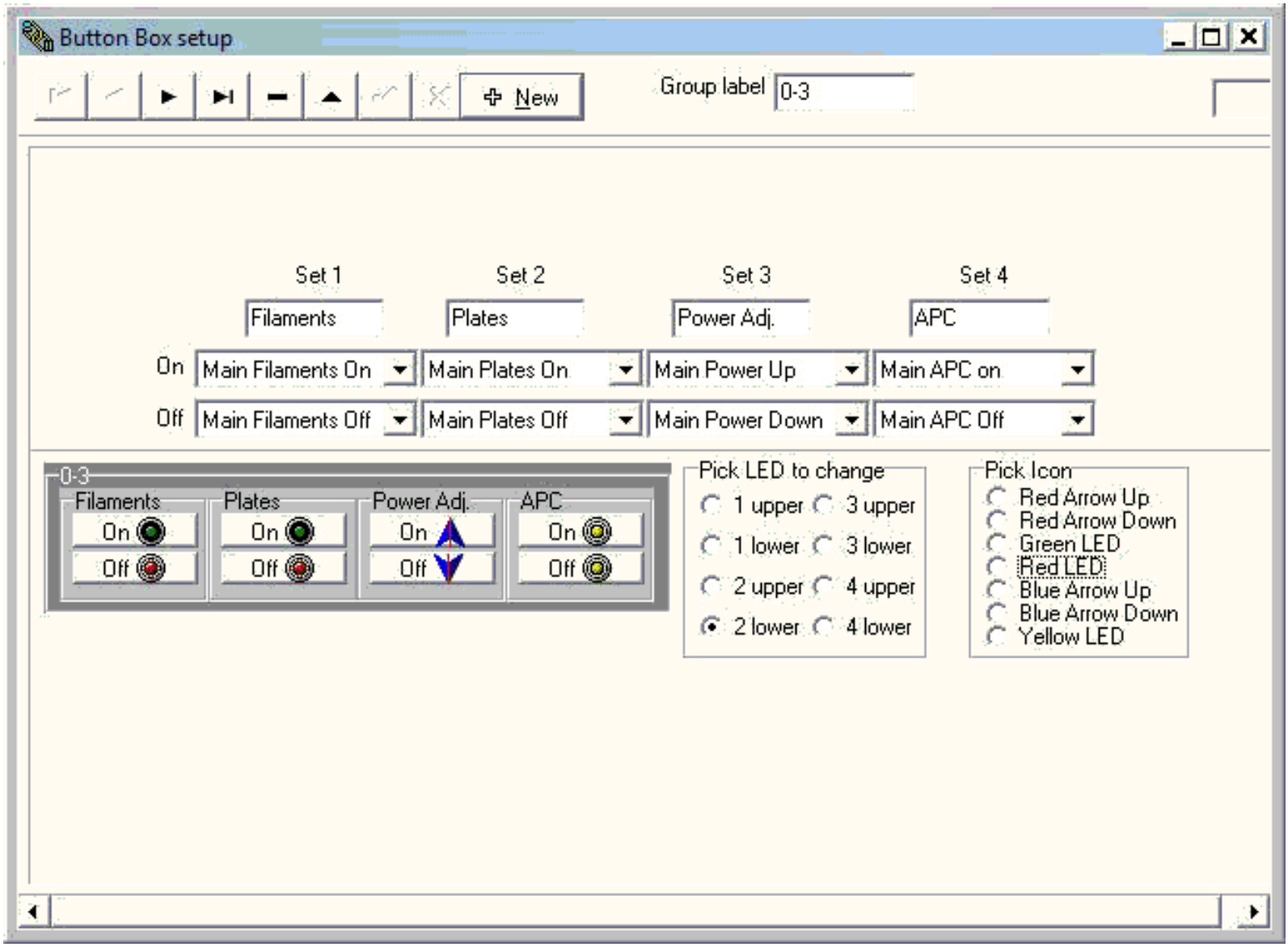
Used to find a page of buttons (relays or macros) quickly without having to click through the page tabs.



Button Box Setup

Table of Contents Database Nav Buttons

Button Box Setup



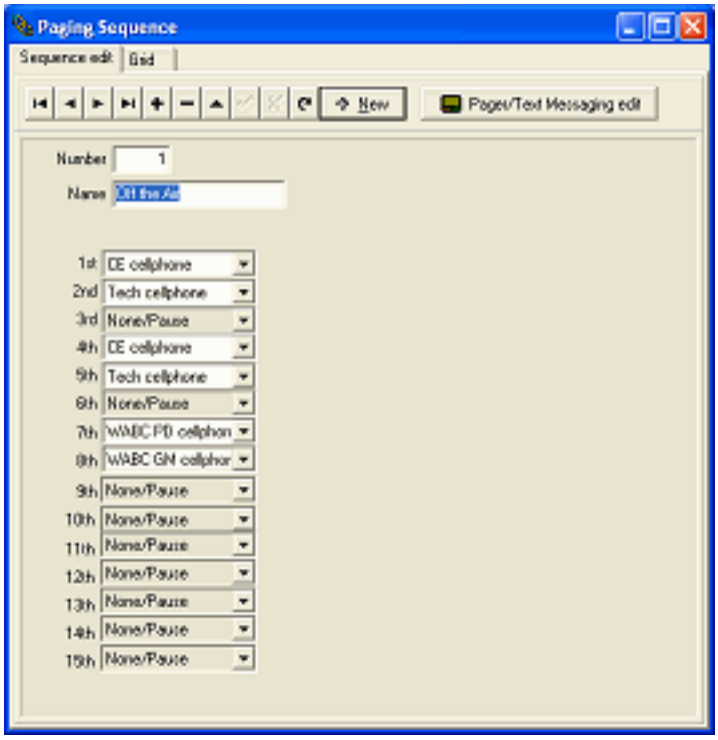
Button Box Setup -Pick LED To Change
Used to select which LED to display on the button.

Button Box Setup - Pick Icon
Used to select which icon to display on the button.

Table of Contents Email List

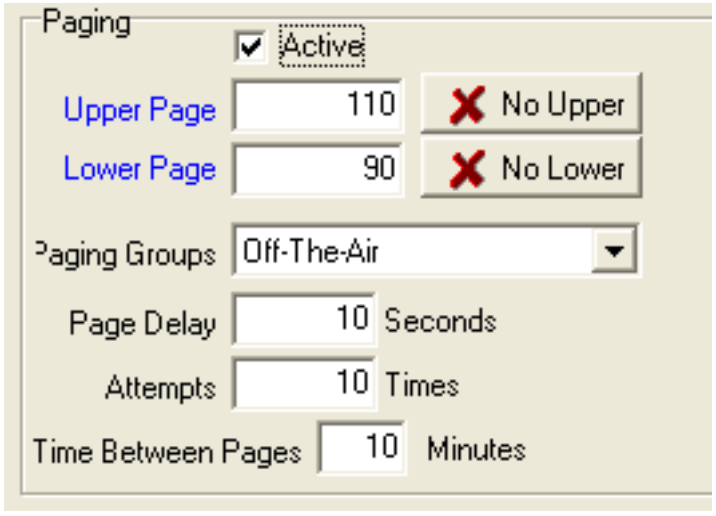
How to Create Paging Groups for Paging, Email and Text Messaging

Note: a pager refers to a pager, Text message, or Email.

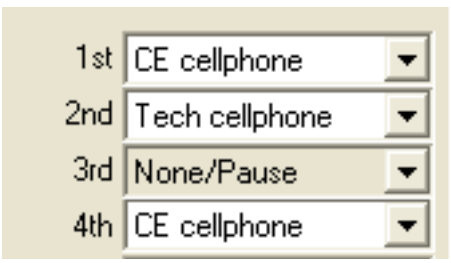


Group Name
A common name for the paging group *(i.e. Off-The-Air, Program Directors, etc.)*

This is an example of the paging group set up to receive notification when the analog channel is in alarm:

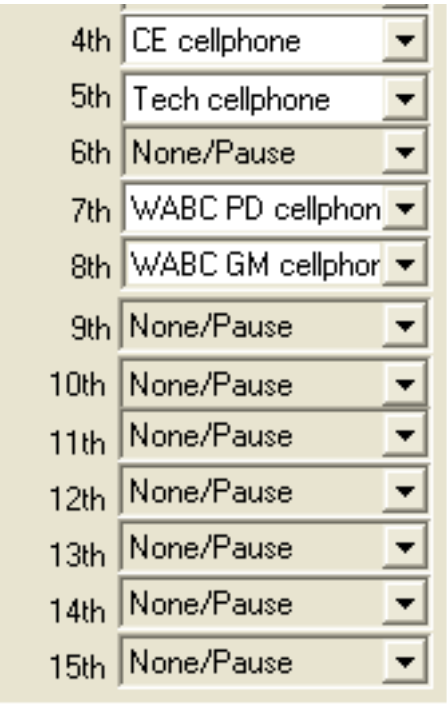


This is the paging group for this example.



At 09:00:00 a.m. the analog channel fell below 90%

1. At 09:00:10 a.m. the CE(1) and Tech(2) are sent a page, text message or Emai. (pages 1 and 2)



2. When Plus Sine finds a None(3), a pause is inserted.
3. At 09:10:10 if the analog channel is still out of limits, the CE(4) and Tech(5) will be sent a page, text message or Email (attempts are made every 10 minutes as set up in **Page Delay**. (pages 2 and 3)
4. Another None(6) is found, and again Plus Sine will wait.
5. At 09:20:10 if the analog channel is still out of limits, the Program Dir(7) and GM(8) will be sent a page, text message or Email. (pages 4 and 5)
6. Another None(9) is found, and again Plus Sine will wait.
7. At this point only 6 of 10 pages, emails, or text messages have been sent, and only 6 contacts are setup in the page group, so Plus Sine will start back at the top of the list.
8. At 09:30:10 a.m. the CE(1) and Tech(2) will be sent a page, text message or Email again. (pages 6 and 7)
9. When Plus Sine finds a None(3), a pause is inserted.
10. At 09:40:10 a.m. the CE(4) and Tech(5) will be sent a page, text message or Email. (pages 8 and 9)
11. Another None(6) is found and again Plus Sine will wait.
12. At 09:50:10 if the Analog Channel is still out of limits, the Program Dir(7) and GM(8) will be sent a page, text message or Email. (This is the 10th contact as set up in **Attempts** so no more pages, text messages or emails will be attempted.)

Paging can be halted by checking the Suspend Paging button box or if the alarm is cleared.

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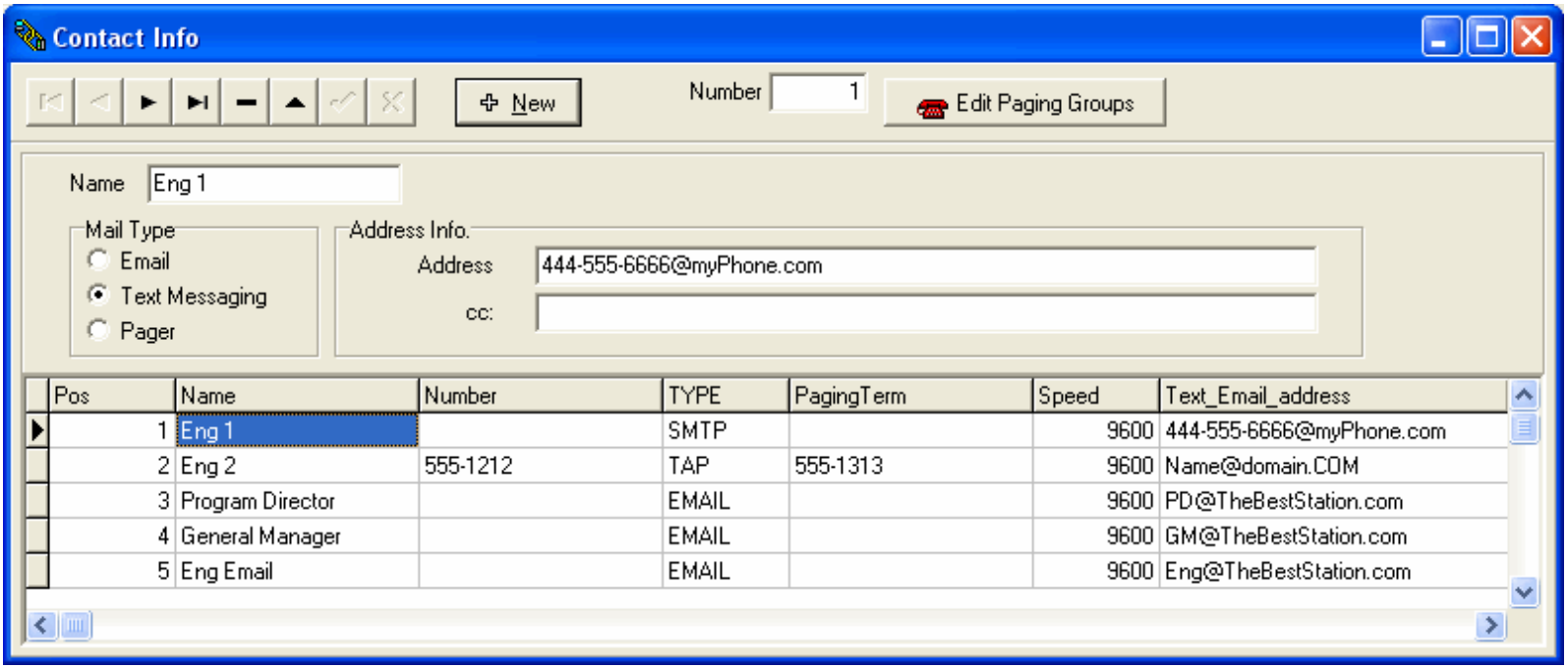
Path: Edit > Messaging and Paging > Contact Info.

How to Create an Email Account



Name
The name of the person receiving the email or text message.
Address
The address of the Text or Email *(i.e. 6625551212@Cell phone.com)*
CC
(Carbon Copy) A second copy of this message/email will be sent to the address entered.

Edit Paging Groups
Once you have created an email account, you must place the contact in a paging group to be used.
How to Create a paging group

Additional Steps Needed to Complete Pager Setup
1. Place the pager in the paging group. See How to Create a paging group to complete this step.
2. You have to tell Plus Sine to load Carrier Pigeon on start up to send emails.

Note: To find System Setup click Edit > Admin > System.

3. Setup email info in Carrier Pigeon (add link to Carrier Pigeon)

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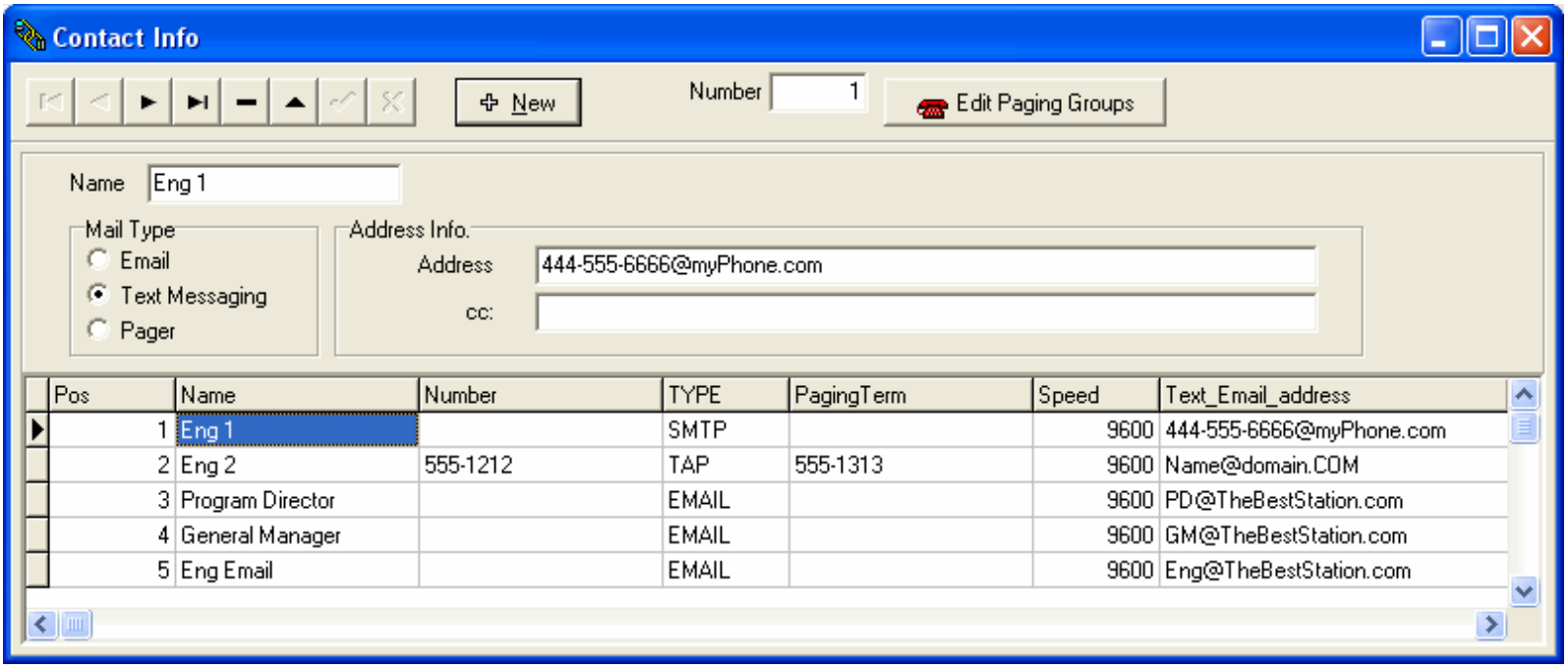
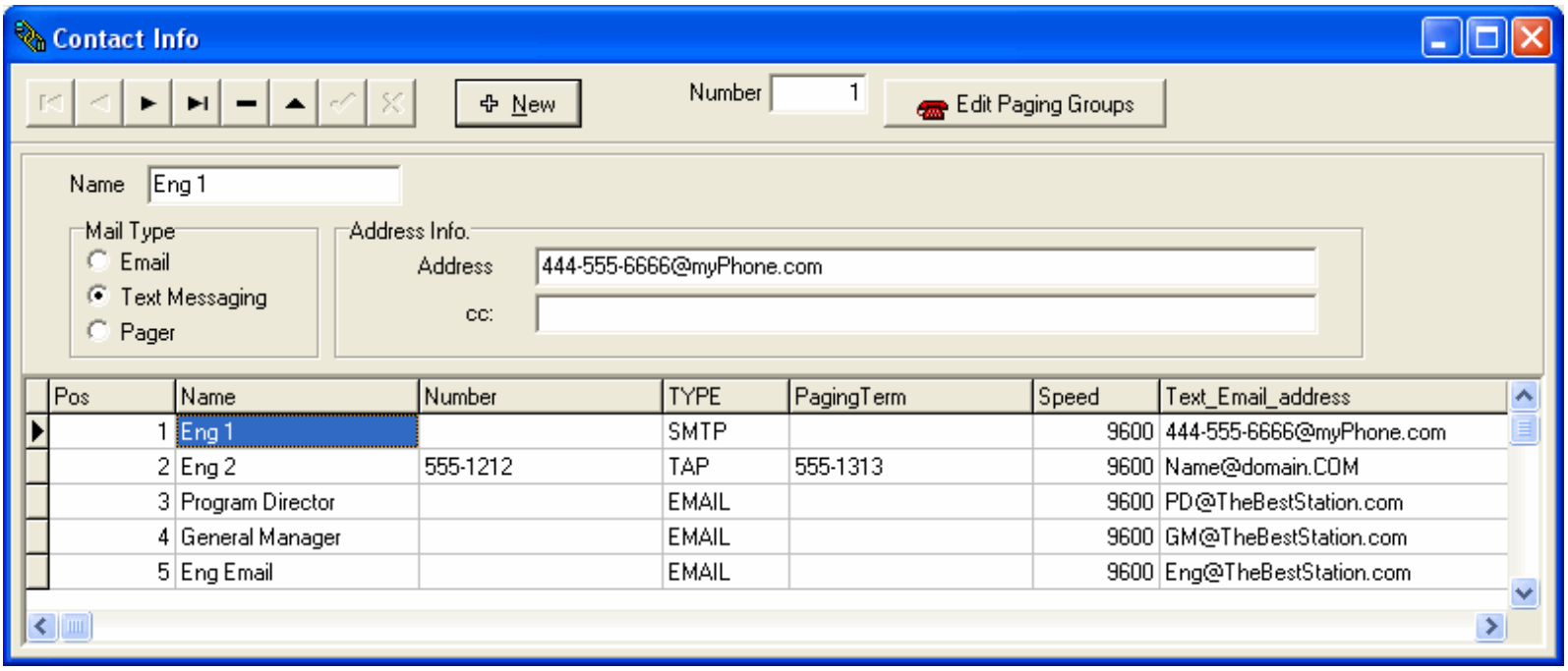


How to Setup a Pager

Path: Edit > Messaging and Paging > Contact Info



Notes:
A pager refers to:
1. Numeric pager (a pager that display only numbers)
2. Alphanumeric pager (a pager that can display text and/or numbers)
3. Email (an email account)
4. Text messaging (a message delivered to a cell phone or internet equipped pager)

Pager Name
The name of the person holding the pager, cell phone (text messaging) or email account.

Paging Info.
All information required to send an alpha-numeric page.

Number The number assigned to the pager.
Paging Terminal The phone number that Gopher(add link to Gopher) will call to access the paging terminal. *Note: If an access code is required to call long distance use a "," to insert a 2 second pause between the number and the code (example, 1-662-555- 1212,1234).*
Speed The baud rate the paging terminal requires.

Additional Steps Needed to Complete Pager Setup

1. Once you have created an email account, you must place the contact in a paging group to be used.
How to Create a paging group
2. You have to tell Plus Sine to load Gopher on start up to send pages.
To find System Setup click Edit > Administration > System.

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Missing image: edit timed event.bmp

How to Create a Test Page, Email, Text Message

Prerequisite:

1. Set up a contact. How to Setup a Pager
2. Assign contact in paging group (add link).
3. Setup email information in Carrier Pigeon (add link)

Setting up the Test Page

1. From the Main page of Plus Sine click **Edit**, then **Timed**, then **Timed Events**.
2. Click the **Add** button.
3. Enter a name for your test page in the **Name Event** box.
4. From the **Event Type** group pick the **Checking In Page**.
5. Click **Time Type** to **Every Day**.
6. Click **Active** to **Yes**.
7. Input chosen time into the time field.
8. Select a metering channel you wish to display.
9. In the **Text Field** enter "***Just Checking In***".
10. Pick the **Paging Group** you would like to check.
11. Set **Number of pages** to ***1***.
12. Click the "Check" key on the database Nav buttons to save your new event.
13. Close the **Edit Event** page.

Send a Test Page

1. On the **Timed events** Tab highlight the new "**checking in page**" event.
2. Click the **Do Event Now** button.
3. Watch the status bar at the bottom of the screen for the progress of your test page.

Notes:

1. Make sure your **Suspend Paging Box** is not checked.
3. Click the Event log and the **Event List Tab** for logging information.
2. Deactivate/Delete the test page after checking it, unless you wish to receive this page every day.

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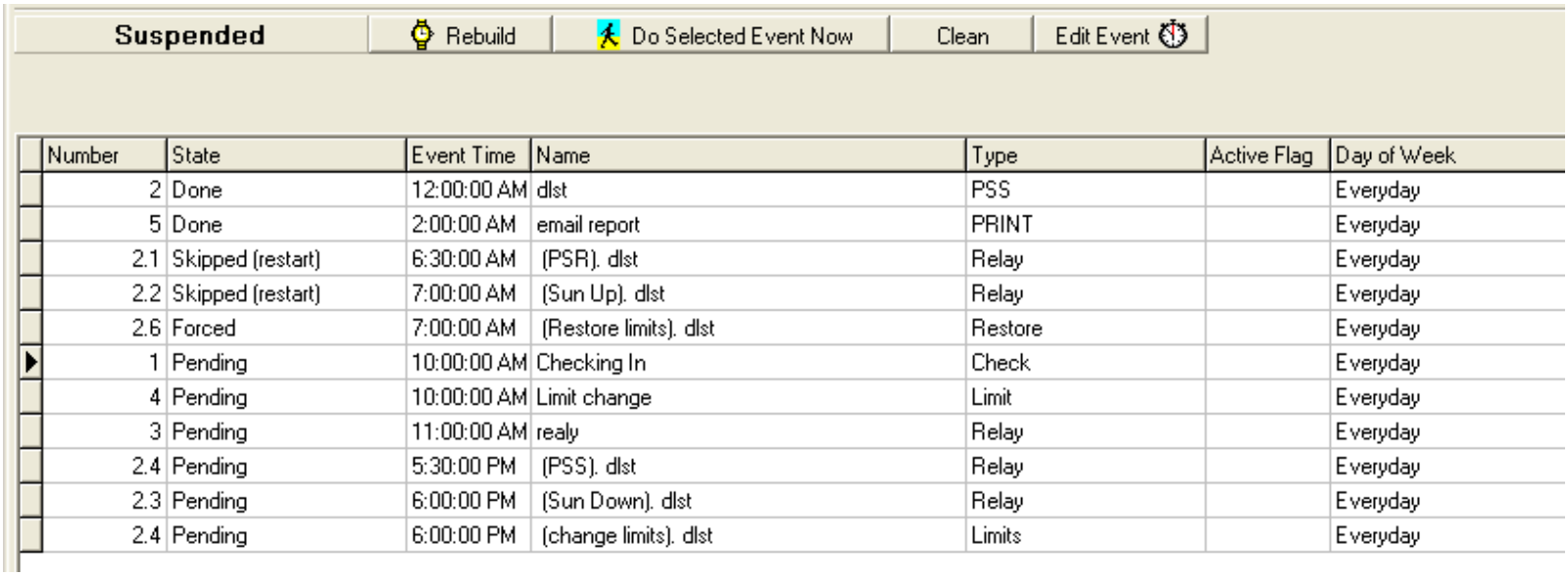
Timed Event Tab



Number	State	Event Time	Name	Type	Active Flag	Day of Week
2	Done	12:00:00 AM	dlst	PSS		Everyday
5	Done	2:00:00 AM	email report	PRINT		Everyday
2.1	Skipped (restart)	6:30:00 AM	(PSR). dlst	Relay		Everyday
2.2	Skipped (restart)	7:00:00 AM	(Sun Up). dlst	Relay		Everyday
2.6	Forced	7:00:00 AM	(Restore limits). dlst	Restore		Everyday
1	Pending	10:00:00 AM	Checking In	Check		Everyday
4	Pending	10:00:00 AM	Limit change	Limit		Everyday
3	Pending	11:00:00 AM	realy	Relay		Everyday
2.4	Pending	5:30:00 PM	(PSS). dlst	Relay		Everyday
2.3	Pending	6:00:00 PM	(Sun Down). dlst	Relay		Everyday
2.4	Pending	6:00:00 PM	(change limits). dlst	Limits		Everyday

Edit timed event

You can use this button to jump to the Edit Event Page without having to go through the menu, Edit > Timed -> Timed Events.

Next Event 00:00:00
Shows the amount of time remaining before the next event is executed.

Event Rebuild
Used to force a rebuild of the time sequence database. Use this after edit, deleting, or adding an event.

Do Selected Event Now
By highlighting an event and pressing this button, you can force an event to occur without waiting for its predefined time.

Clean
Used to clear the event list of all events that have been completed.

Timed Event Number
The number of the timed event used to create this line. If event 3 is a PSS event, it will create several sub events numbered 3.1, 3.2, etc.

Timed Event State
The state of the current event. *(i.e. pending, done or skipped)*

Event Time
The time that this event will be executed.

Event Name
A common name given to an event to describe the purpose of the event.

Active Flag
if this is set to True, the event will fire. If this is set to False, the event will not fire. An easy way to mute an event without deleting it.

Day of Week
The day of the week that this event should run.

Start Time
If the event is an hourly event, then certain parts of the day can be excluded by setting the start time and the stop time.

Stop Time
If the event is an hourly event, then certain parts of the day can be excluded by setting the start time and the stop time.

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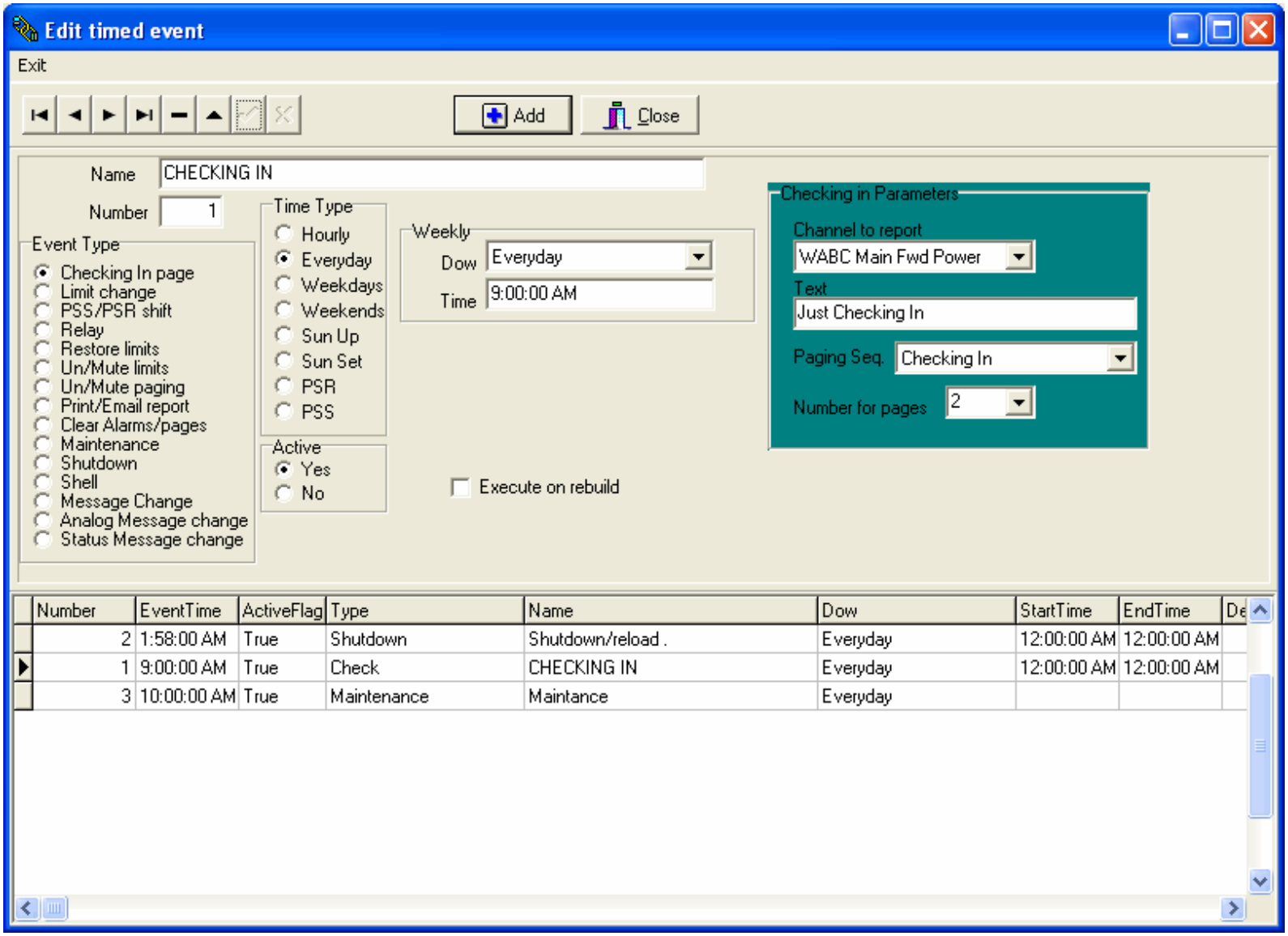
Timed Event Edit

An event that is executed based on time. There are several different events that can be used.
The events can be run once an hour, day or week. An event can be stopped by deactivating the event. It is not necessary to delete the event, just deactivate it. By checking the Suspend Events on the main page, all events and triggers will be stopped.



Event Type

Active
Check to allow this timed event to be executed.
Execute on rebuild
Any event that is checked will be executed every time Plus Sine is restarted or the events are rebuilt. Use this check box on events like message changes, limit changes or mutes to make sure important events like tower light monitoring is activated after a restart.
Hourly
Once eveny hour. If the time is set to 00:59:50 then this event will occur at 01:59:50, 02:59:50.....22:59:50,23:59.50
Everyday
This event will be executed once a day. *(i.e. If the event time is 10:00:00 a.m. and the relay is APC on, then the Automatic Power Control will be turned back on every day at 10:00:00 a.m.)*
Weekdays
This event will only execute on weekdays, Monday through Friday.
Weekends
This event will only execute on weekends, Saturday and Sunday.
Sunrise
This event will execute based on the Sunrise time defined in the PSR/PSS table. The time will shift every month.
Sunset
This event will execute based on the Sunset time defined in the PSR/PSS table . The time will shift every month.
PSR
This event will execute based on the PSR time defined in the PSR/PSS table. The time will shift every month.
PSS

* Timed Event Edit

This event will execute based on the PSS time defined in the PSR/PSS table. The time will shift every month.

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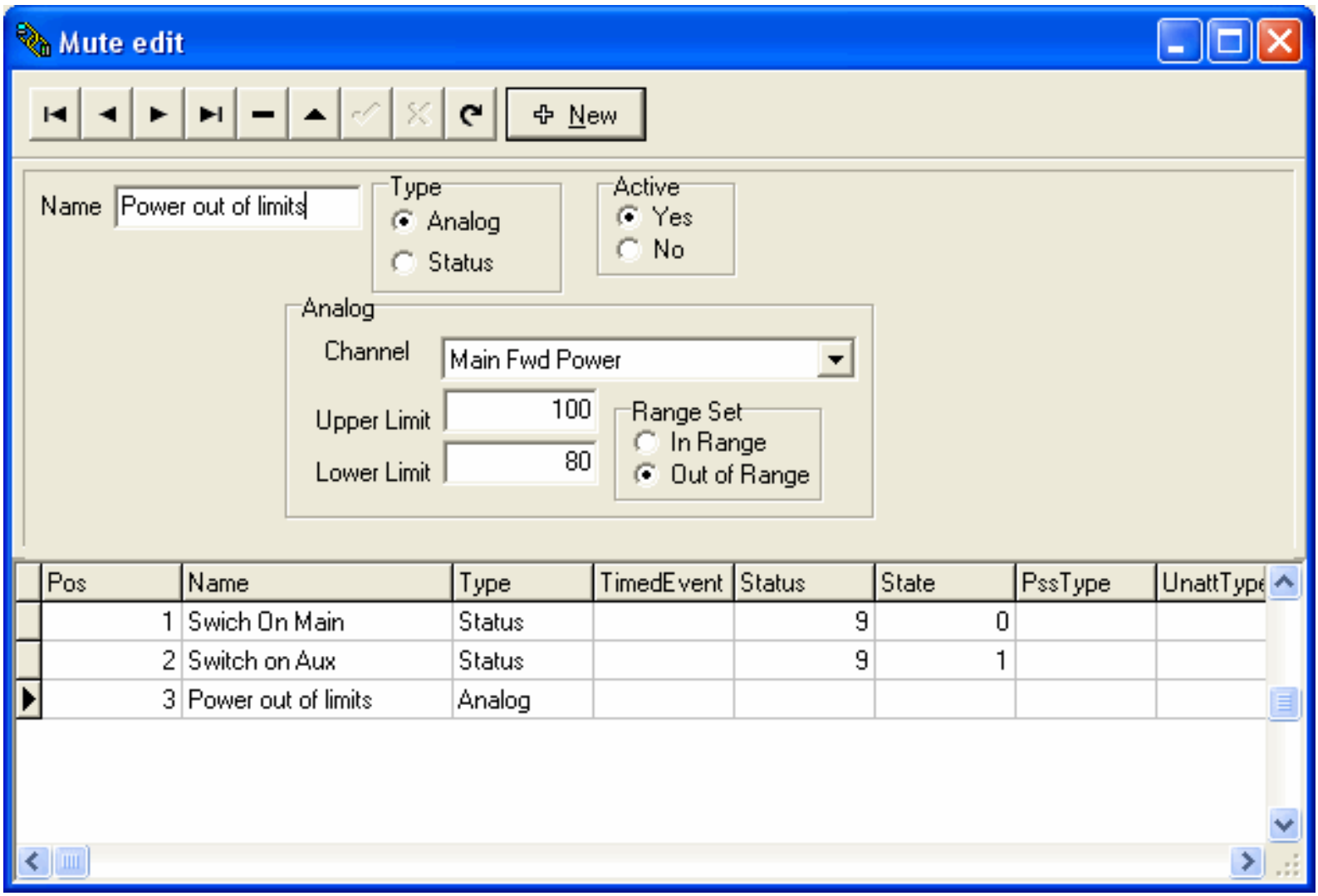
Mute (Analog)



When a mute is active:
1. any analog channel with the mute attached, will not Log or Page
2. triggers with mutes attached will be muted (will not execute).

Notes: do not confuse the active state of a mute function with the mute check box. The mute check box is a quick way to deactivate a mute without deleting the mute.

Mute Name
The name given to a mute function so that it is easy to identify when attaching it to an Analog Channel , Status Channel or Trigger..

Quick Edit
Used to jump to other setup menus.

Mute Type
Status Watch for a status change to activate a trigger.
Analog Watch for an analog channel to exceed or drop below a user defined limit to activate a trigger.

Analog Channel
The analog channel that the trigger is monitoring.

Upper Limit
If the Range Set is set to In Range and the input exceeds the upper limit, the mute will become active.
If the Range Set is set to Out of Range and the input drops below the upper limit, the mute will become active.

Lower Limit
If the Range Set is set to In Range and the input drops below the lower limit, the mute will become active.
If the Range Set is set to Out of Range and the input exceeds the lower limit, the mute will become active.

In/out Range
Determines if the mute becomes active in or out of the range set in the upper and lower limits.

Examples

Active
The active button is a quick way to defeat a mute without deleting the mute.

New Mute
Used to create a new mute function.

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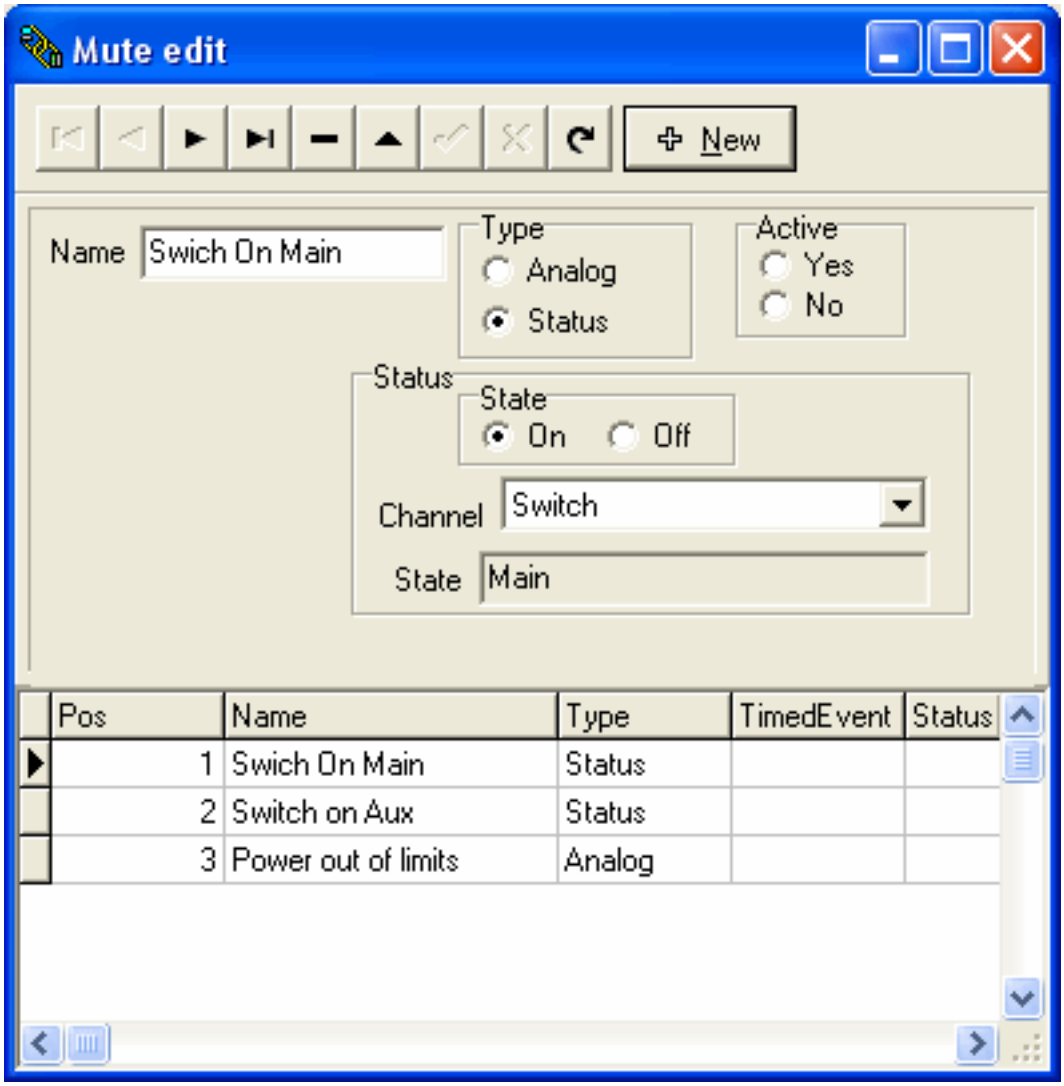
Mute (Status)



When a mute is active:
1. any status channel with the mute attached, will not Log or Page
2. triggers with mutes attached will be muted (will not execute).

Notes: do not confuse the active state of a mute function with the mute check box. The mute check box is a quick way to deactivate a mute without deleting the mute.

Mute Name
The name given to a mute function so that it is easy to identify when attaching it to an Analog Channel , Status Channel or Trigger..

Quick Edit
Used to jump to other setup menus.

Mute Type
Status Watch for a status change to activate a trigger.
Analog Watch for an analog channel to exceed or drop below a user defined limit to activate a trigger.

Status Channel
The ~~status channel~~ that the trigger is monitoring.

Status State Select
Used to select the status state that will cause the mute to become active *(i.e. the generator on state)*

Status State Show
Used to show the status state for the status channel selected.

New Mute
Used to create a new mute function.

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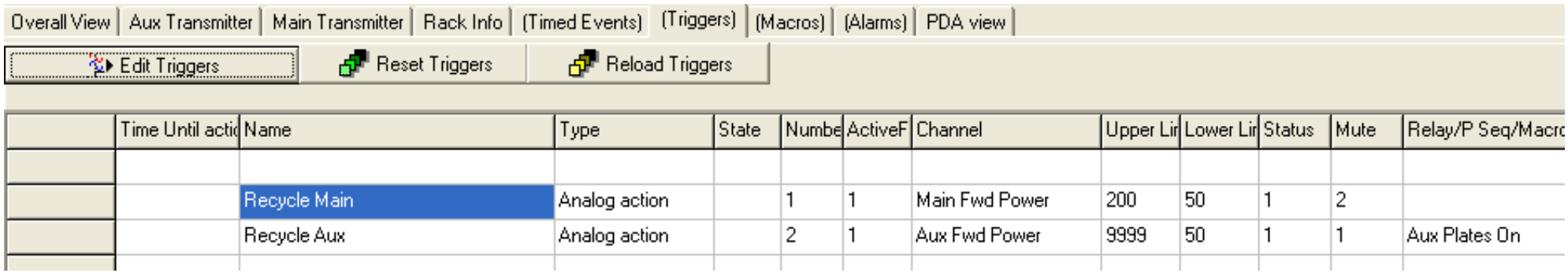
Trigger Tab



Edit Trigger
A quick way to jump to the Edit Trigger Page.

Reload Triggers
Used to force a reload of triggers. Used after adding, editing, or deleting triggers.

Reset Triggers
Clears the counter and starts the trigger over, as if the alarm had not happened yet.

Time until Action
Indicates that the trigger has been tripped, and the action will happen in a certain number amount of time.

Name Trigger
The common name for the trigger. This name will be logged in the event log.

State
Shows the state of a trigger:
None - No alarm. It is in the monitoring state.
Done - Its in an alarm state. The trigger has completed its action *(i.e. relay or macro activated or page or text message sent)*.

Table of Contents

Trigger Edit

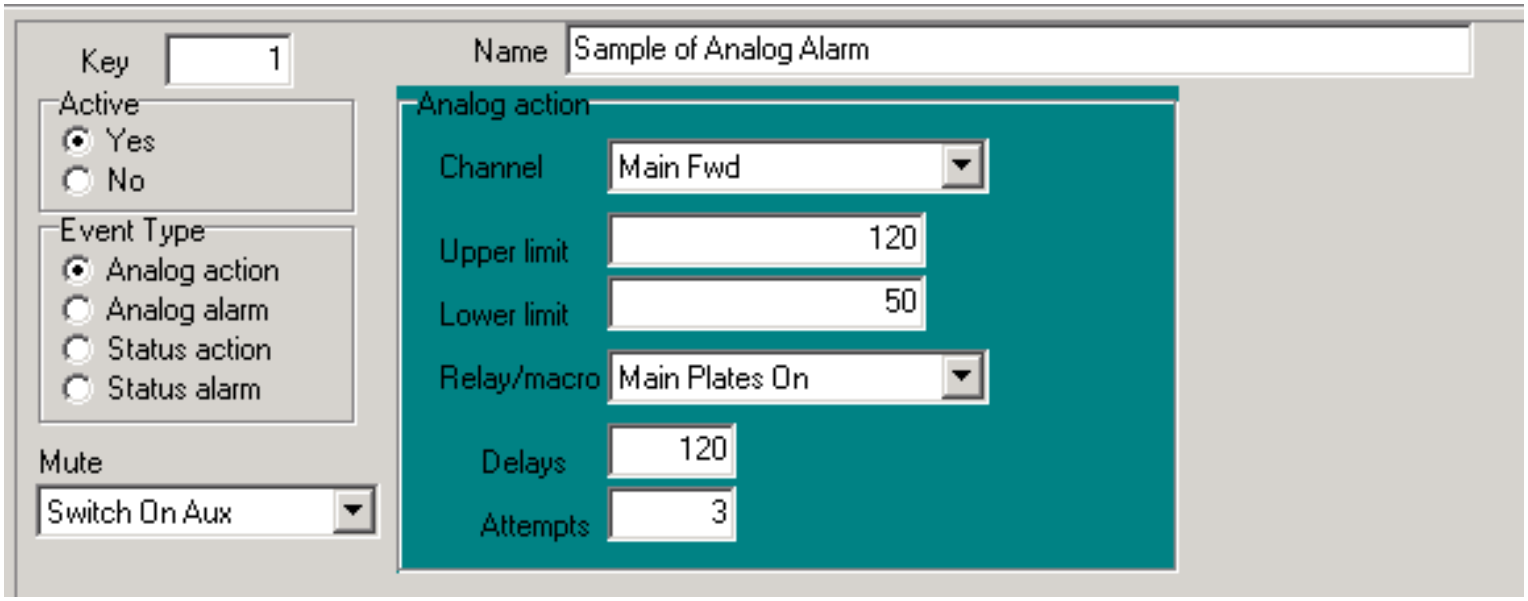
Trigger Name

The common name for the trigger. This name will be logged in the event log..

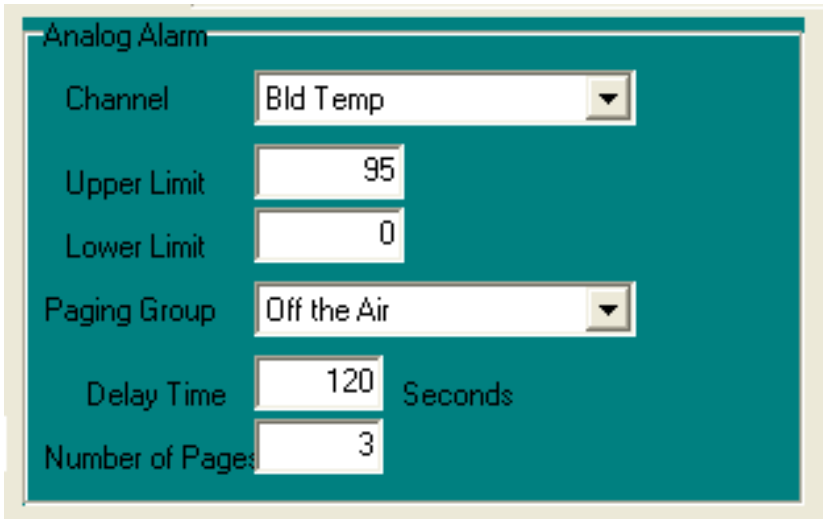
Trigger Edit

Types of triggers:

1. Analog Action. If the trigger is tripped, then execute a relay or macro.

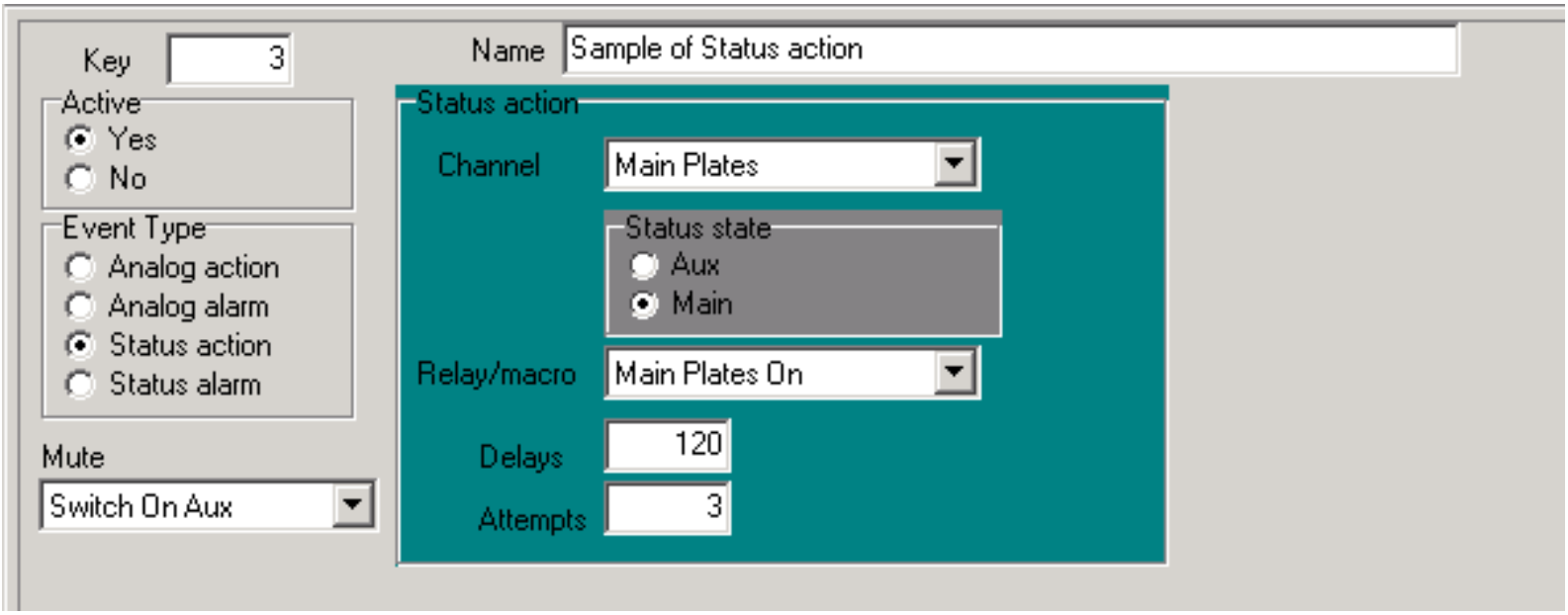


2. Analog Alarm. If the trigger is tripped, then execute a page, emai or text message.

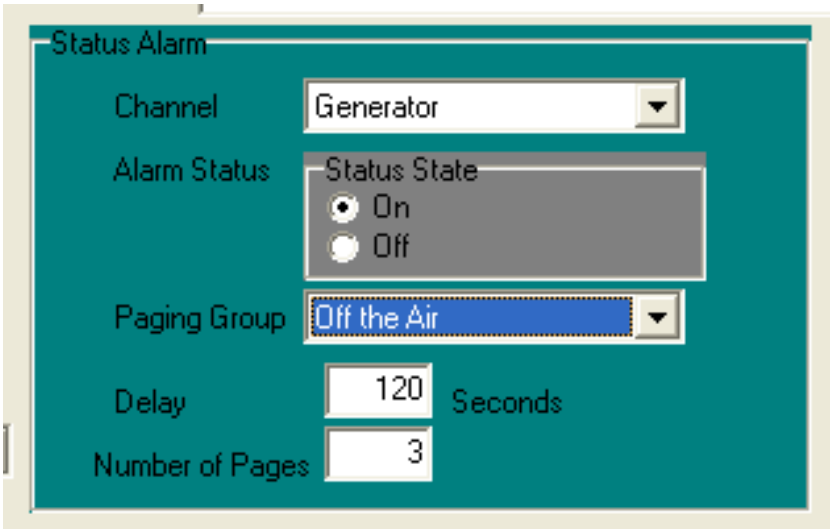


3. Status Action. If the trigger is tripped, then execute a relay or macro.

* Trigger Edit



4. Status Alarm. If the trigger is tripped, then execute a page, email, or text message.



Key

Used as the key to link this record to another database. Do not alter this field.

Active Flag

If Active Flag is set to Yes, then the trigger is monitoring trip points.
If Active Flag is set to No, then the trigger is deactivated and is not monitoring trip points.

Note: This is an easy way to deactivate a trigger without deleting the trigger.

Channel

The channel to monitor. *(i.e. "Forward Power Output" or "Main Forward and Main Plate Current")*

Upper Limit (Analog Action or Alarm)

The upper limit where the trigger will be activated (upper trip point). If this point is exceeded, the trigger will become active.

After the delay time, the relay or macro will be activated or the page or email will be sent.

Lower Limit (Analog Action/Alarm)

The lower limit where the trigger will be activated (lower trip point). If this analog channel drops below this point, the trigger will become active. After the delay time, the relay or macro will be activated or the page or email will be sent.

Mute (Trigger)

Used to select a mute profile for a particular trigger. If the mute is active, then the trigger will not occur. *(i.e. "A building power out mute" could be defined to monitor for a loss in incoming AC power. Once the "building power out mute" is associated with a trigger designed to recycle the transmitter, Plus Sine will not attempt to recyle the transmitter until building power is restored.)*

OLEN add link to Mute setup.

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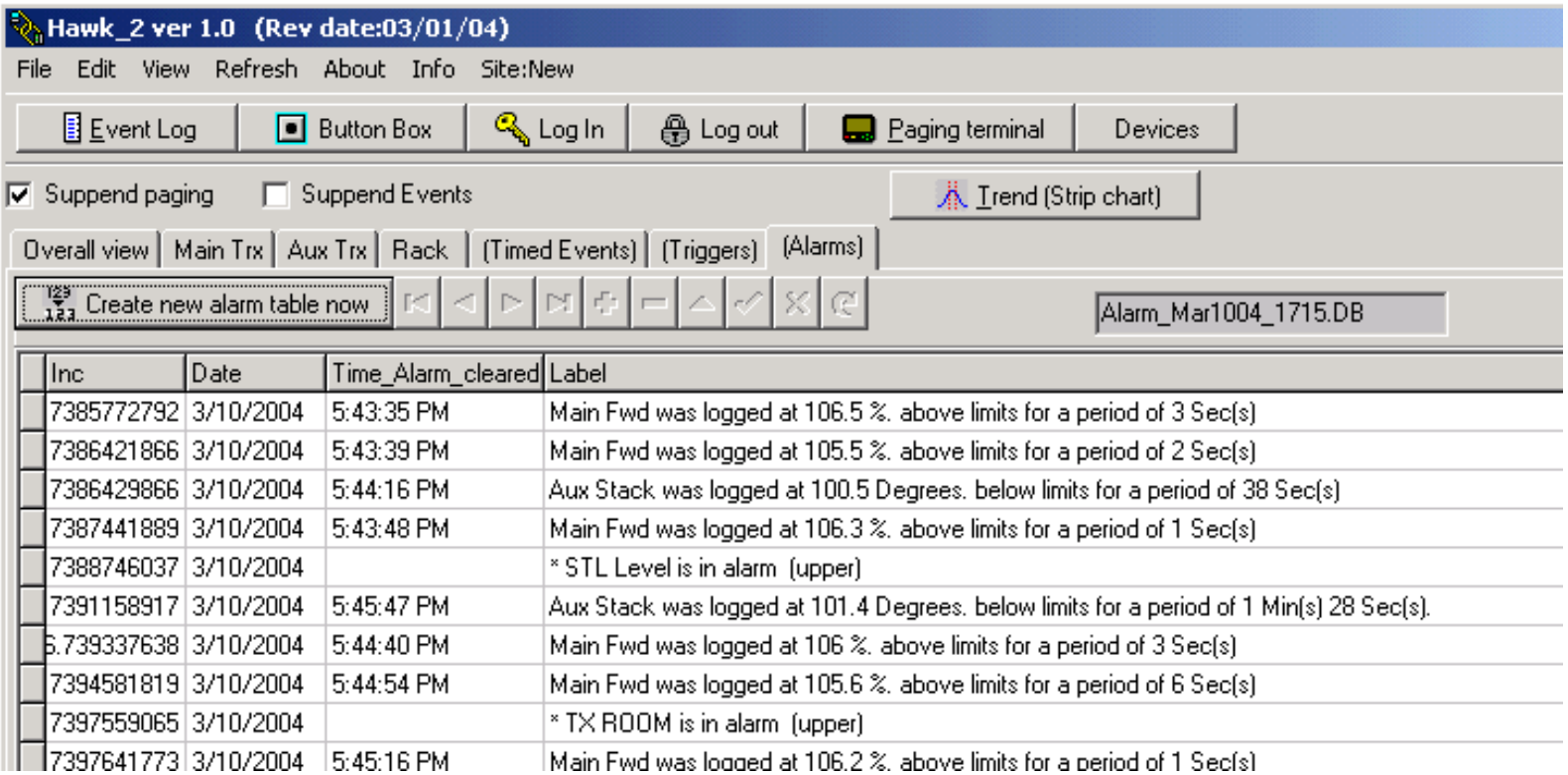
Alarm Tab



Create New Alarm Table
Used to close the current alarm table and create a new one. Used if an alarm table is corrupted or is out of date.

Alarm Date
The date that the alarm occurred.

Time Alarm Cleared
The time the alarm was cleared, or the time the alarm was truncated on startup.

Label
The common name or text information about an alarm. *(i.e. what channel, what date and time, above or below what limit, and for how long)*

Current Database
The name of the current database in which the alarms are being stored. When the alarm database gets too large to handle, Plus Sine will automatically close the database and create a new one. The alarm database files will be deleted based on the dates stated in the system setup.

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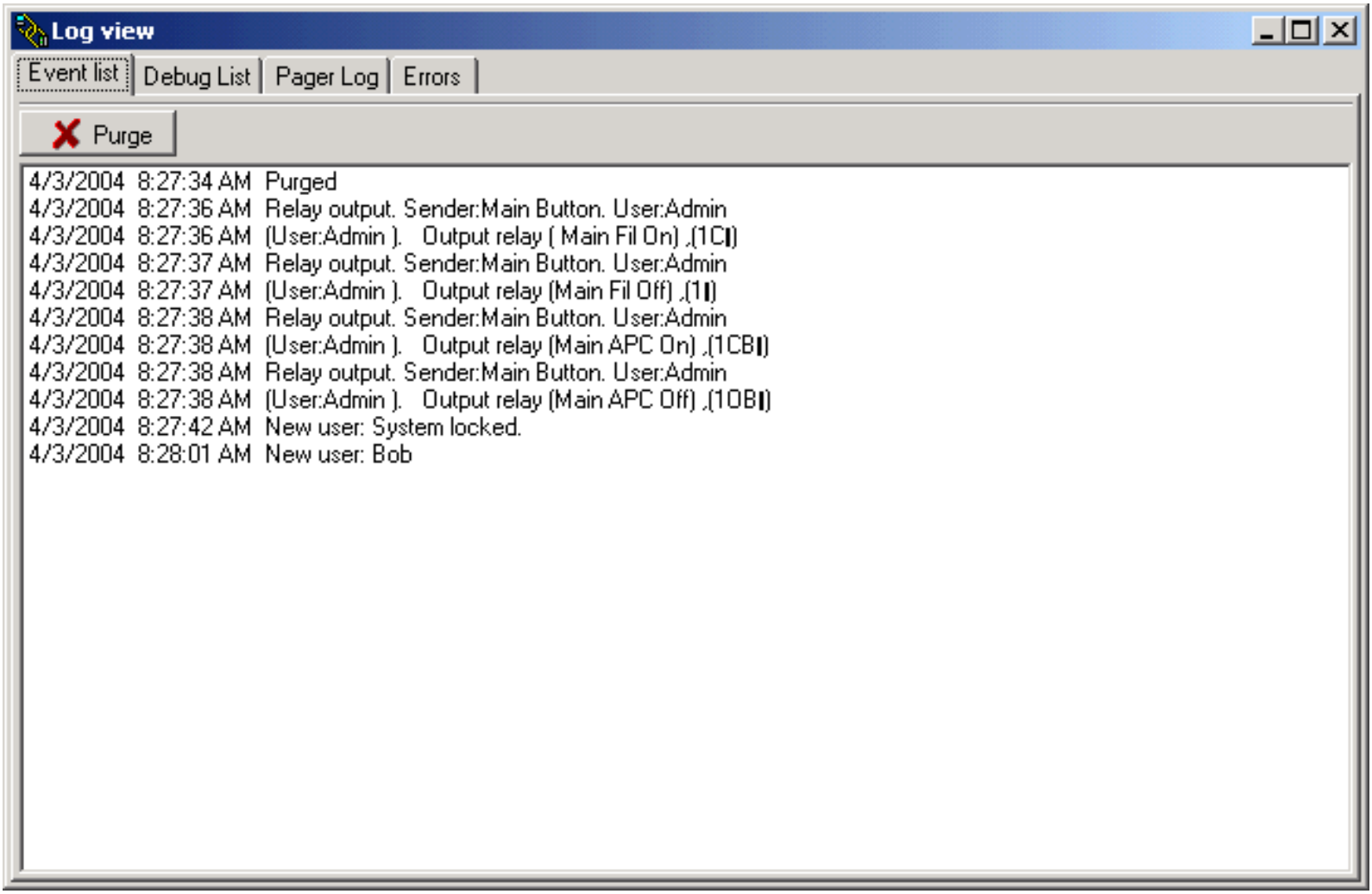
Event Log



By pressing this button, you can view the event logs.

There are 2 types of event logs:
1. Events (logs the users, relays, timed events, triggers, and macros).
2. Errors (a quick list of errors *i.e database, hardware, and setup*).

Notes: Everything found in the error log is stored to disk in the debug log.
The error log is an easy way to find errors without going through the debug log.
All logs are stored to disk i.e. "D:\stations\your stations\logs\..."
Logs are purged based on the number of months defined in ~~setup setup~~
.

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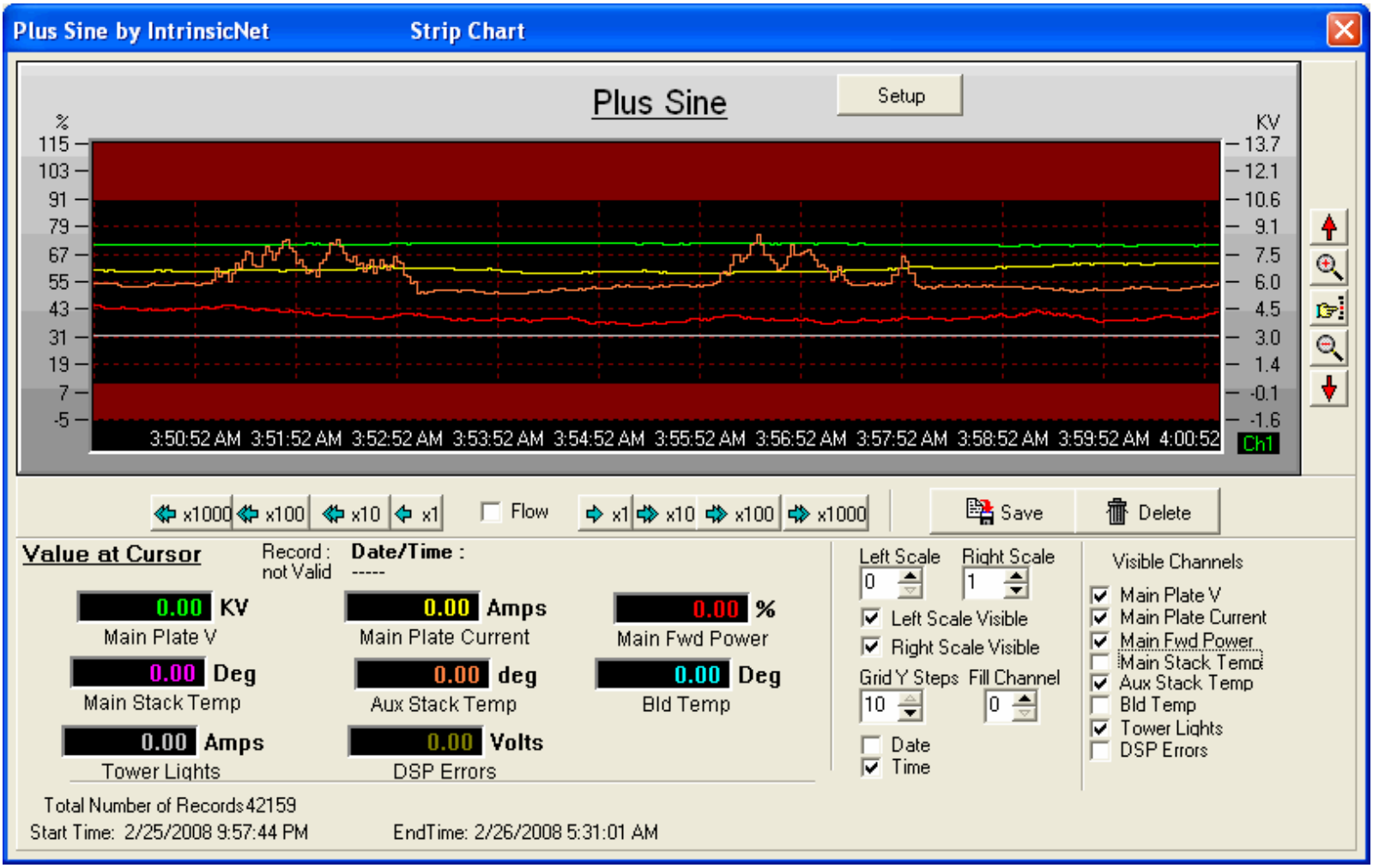
Trend Charts

A trend (strip chart) is a data acquisition tool used to generate a plot, graph or other visualization of data versus time.
A trend chart is used to monitor either analog or status channels in real time. As many as 8 channels can be recorded at one time. The charts can show the time relationship between the channels. Even though the strip chart can only record 8 channels at a time, Plus Sine keeps a continuous log of all analog and status channels. You can select and change the channels that you want to visualize on the chart at any time.

The Trend View tool is used to view Trend Chart data for a previous date. The Trend Chart files are closed at midnight. The files are then stored in the "D:\stations\My Station\charts\" directory. There is a data file with the extension ".TRD" and a Setup file with the extension ".INI". For example, for the date of Jan 05 2008, the files would be Jan0508.TRD and Jan0508.INI. The files are purged every night. Files will remain on the hard drive until after the date set in the system setup. The items recorded on the Trend Chart are set up by pressing the "Chart Setup" button at the top right side of the Trend Chart.



x1000 Back Move the chart back 1000 samples (if your Data write rate = 1 sample/second this will be 16 minutes and 40 seconds)
X100 Back Moves the chart back 100 samples (if your Data write rate = 1 sample/second this will be 1 minute and 40 seconds)
X10 Back Moves the chart back 10 samples (if your Data write rate = 1 sample/second this will be 10 seconds)
X1 back Moves the chart back 1 sample (if your Data write rate = 1 sample/second this will be 1 second)
X1 Forward Moves the chart forward 1 samples (if your Data write rate = 1 sample/second this will be 1 second)
X10 Forward Moves the chart forward 10 samples (if your Data write rate = 1 sample/second this will be 10 seconds)
X100 Forward Moves the chart forward 100 samples (if your Data write rate = 1 sample/second this will be 1 minute and 40 seconds)
X1000 Forward Moves the chart forward 1000 samples (if your Data write rate = 1 sample/second this will be 16 minutes and 40 seconds)

Flow
If **Flow** is checked, the graph will move forward with time. If **Flow** is not checked, the chart will not advance.
Notes: Use the unchecked mode if you would like to view a single point in time without the chart moving forward.

Save
Used to save the chart to a file name other than the default. This can be used to export a table to a memory stick.

Note: The Trend Chart files are automatically updated on the hard drive to insure minimum data loss in the event of a lockup or a UPS failure.

Delete

* Trend charts

Deletes the data displayed on the current screen and purges the current trend file (current.trd) on the hard drive.

Left Scale Used to set the left scale to the range of the channel selected.
Right Scale Used to set the right scale to the range of the channel selected.
Left Scale Visible Used to turn the left scale on and off.
Right Scale Visible Used to turn on and off the right scale.
Grid Y Steps Change the spacing of the Y grid (located on the left and right side of the graph).

Fill Channel
If selected (zero means fill no channel). The selected channel will be filled under the curve.
Value at Cursor
The value of every channel logged by the Trend Chart will be shown at the point you select on the graph (noted by the white horizontal line).

Visible Channels
This allows you to select the channels to be displayed. The channels that are not selected will still be recorded but not displayed. This allows you to minimize the clutter on the screen
Up Button Moves the center point up.
Down Button Moves the center point down.
Zoom In Expands the vertical gain.
Zoom Out Contracts the vertical gain.

Reset Button Resets the zoom and the center point to the original defaults.
Setup Button Jumps to the Trend Chart Setup Screen.
Date Displays the current date in the lower part of the graph.
Time Displays the time in the lower part of the graph.
Total Number of Records The total number of records recorded in the current.trd file. (information only)
Start Time Shows the start time of the current trend file (current.trd).
Stop Time Shows the stop time of the current trend file (current.trd).

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Trend Setup

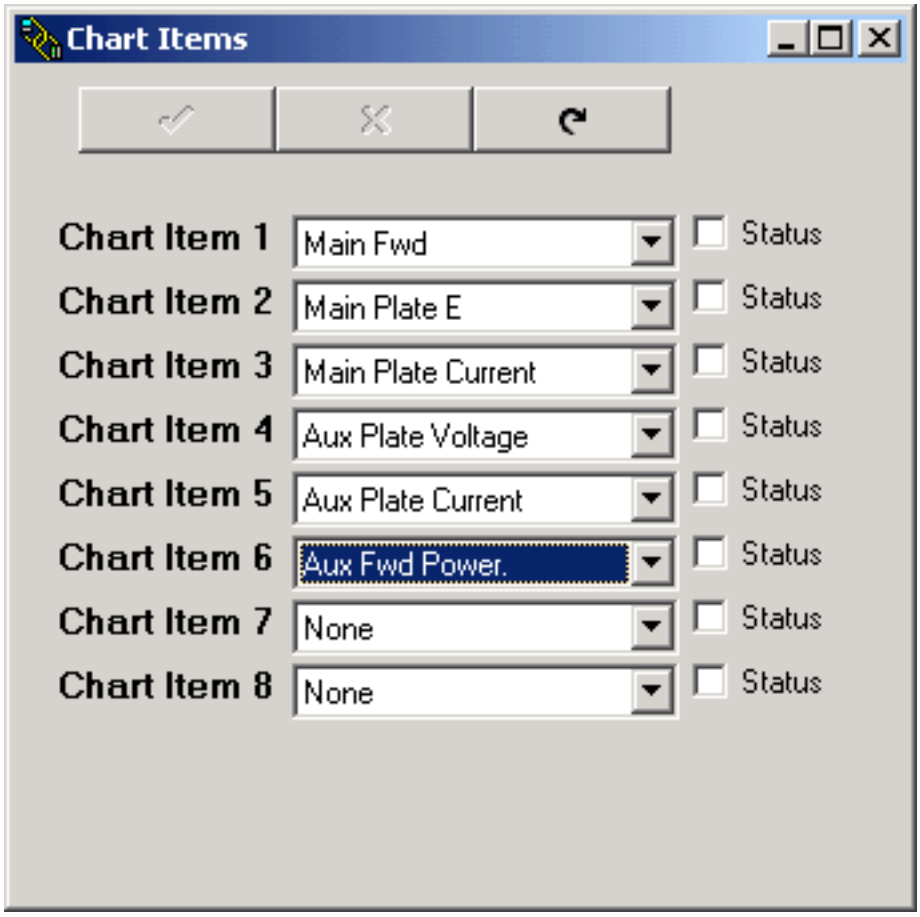

Chart Item
Select the items to record and view on the Trend Chart.

Status Use the Status check box if you want to display a status (on/off) item instead of an analog item.

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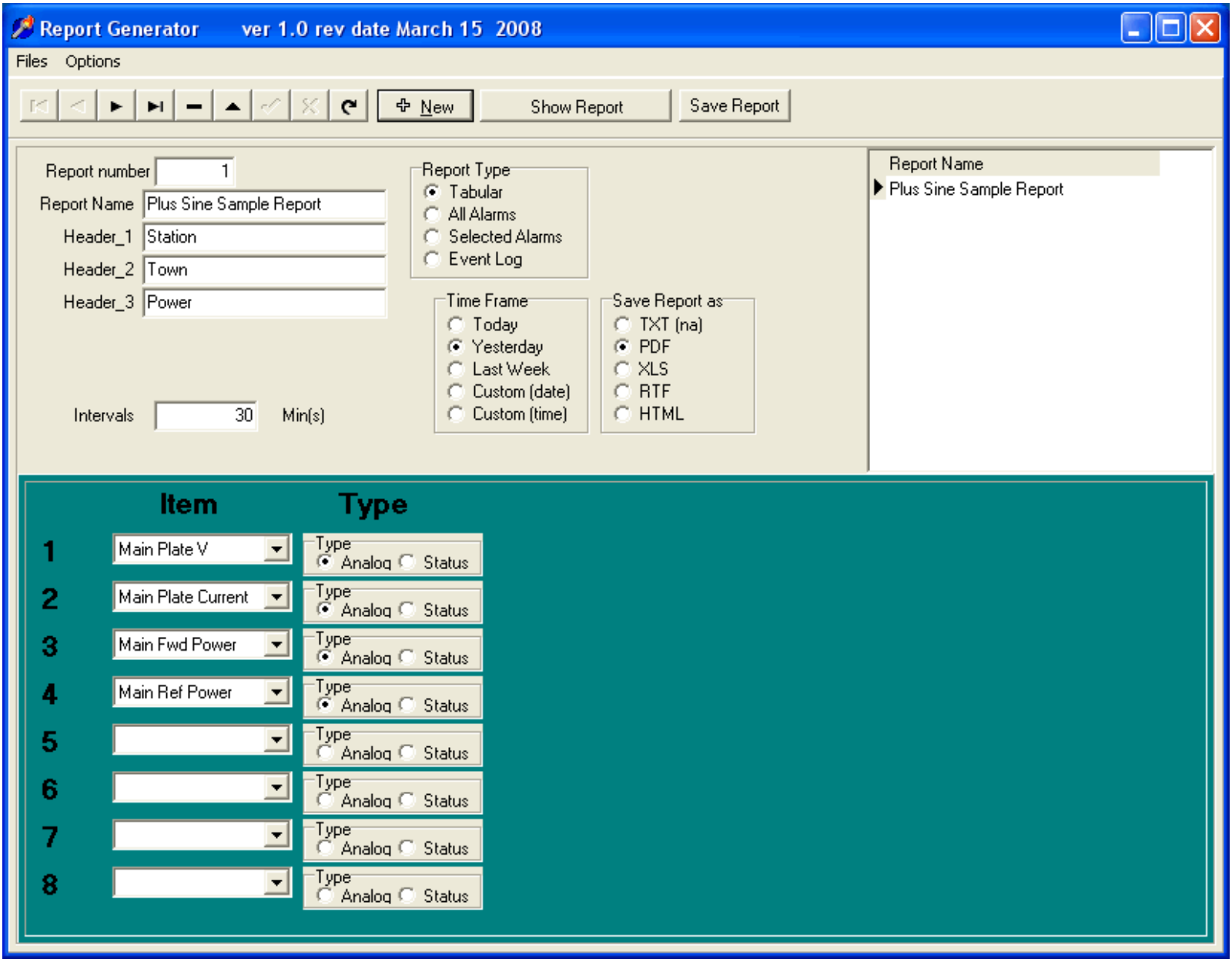
Report Generator



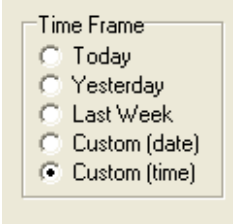
Add Alarms If checked, the alarm list will be included when printing or emailing logs.

Report Name The name for the report. Used to identify the report when setting up a timed event to email or print a log.

Header 1-3 Three lines that will be printed on the top of a report.(i.e station, call letters, city, state state, and report type).

Intervals The amount of time in seconds between readings that will be recorded on reports. The old FCC logs were recorded at 30 minute intervals. This number cannot be smaller than 1 second.

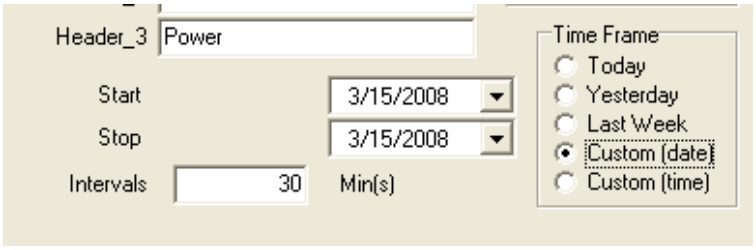
Time Frame



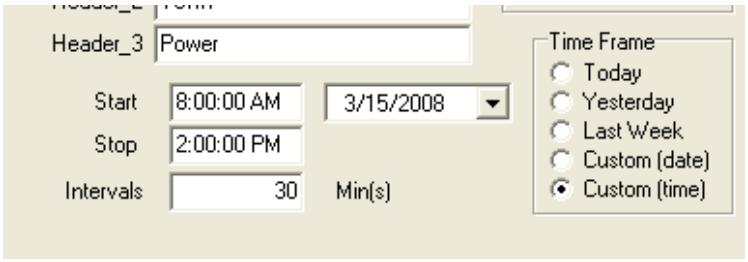
Today Today's log (from midnight last night until the current time)
Yesterday From midnight (00:00:00) two nights ago until midnight(00:00:00) last night.
Last Week From Sunday morning at midnight (00:00:00) to the following Sunday morning at midnight (00:00:00).

* Report Generator

Custom (date) User defined start and ending date.



Custom (time) User defined start and ending time.



Report List A list of reports you have created. Click on the report name, and that report will be displayed for editing or reviewing.

Report Items Type Select the items to be reported (status or analog).

Analog or Status Report The type of items to display for selection. Use the Status check box if you want to report a status (on/off) item instead of an analog item.

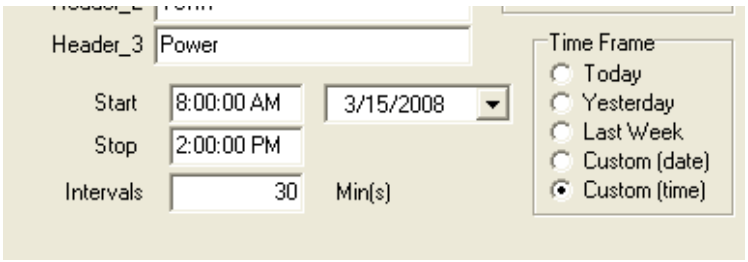
Alarm Report Used to view or print an report of alarms.An Alarm Report is a report generated from the alarm list. This report shows which channel was in alarm and the duration of the alarm.

Save Report Used to save the current report to disk. Reports are stored at 'D:\stations\Your stations\logs\report'.
There are two types of reports, tabular format and alarm format.

Sample 1. If the report name is Main Transmitter Log and the current date is Apr 10 2008, then

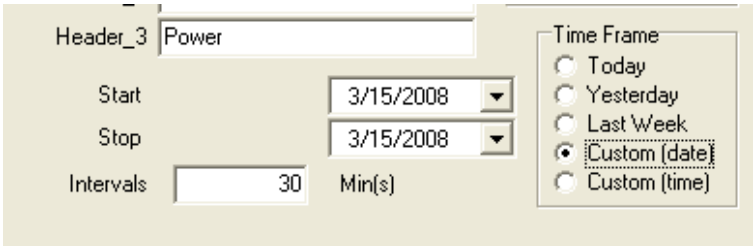
The Tabular format will be saved as 'Main Transmitter Log_1_Apr 10 08'
The Alarm format will be saved as 'Main Transmitter Log_2_Apr 10 08'

Custom Time



Allows you to select the start and stop time for a report.

Custom Date



Allows you to pick a custom start and stop date for a report.

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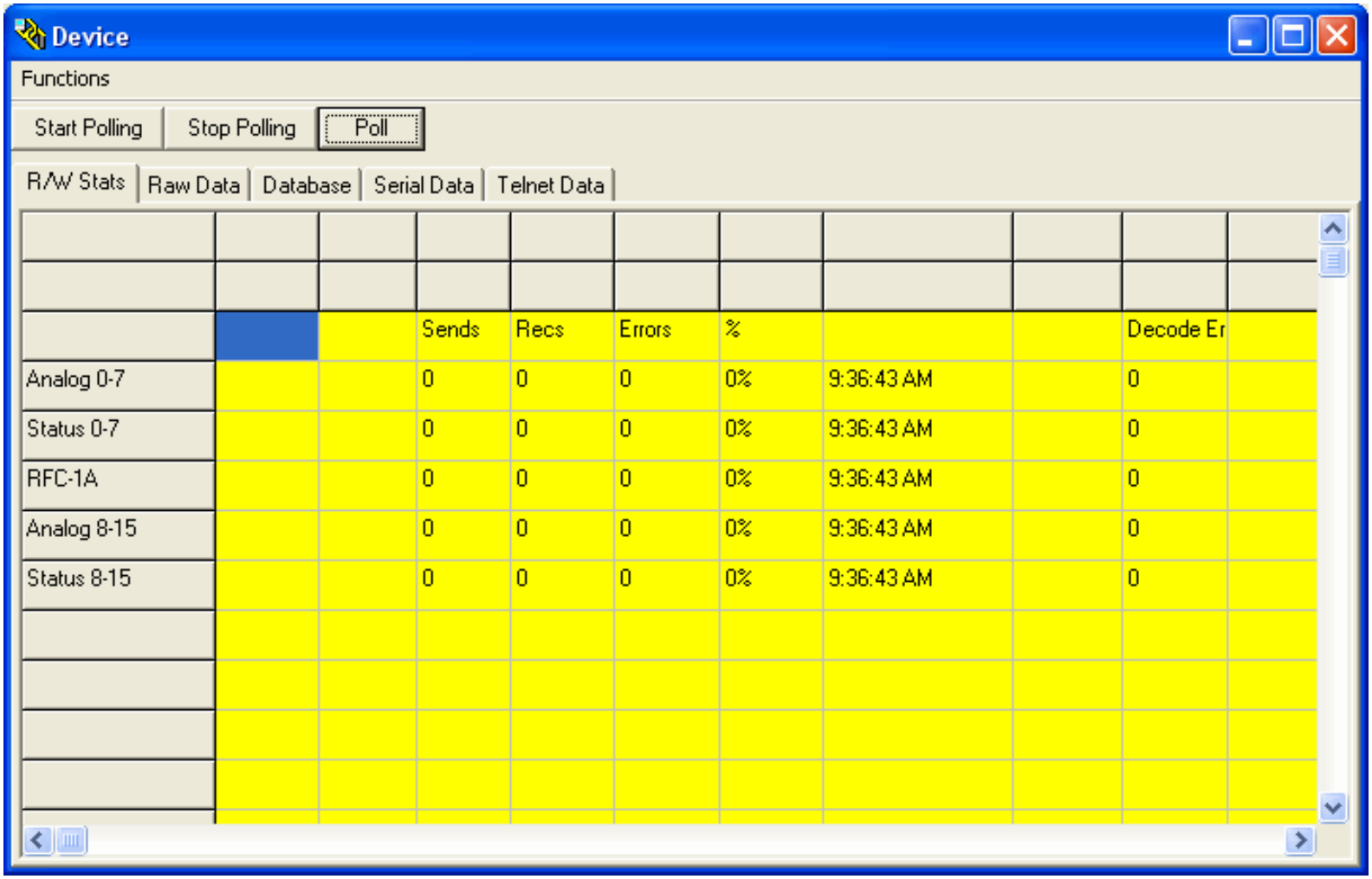
Device Form

Used to display data about devices and to view input database. The device form is used to check the status of all devices attached to Plus Sine.
Detail



Stop Polling Used to cause Plus Sine to stop sending data. Then you can determine what data is being received by your "SEND" command.
Start Polling Used to cause Plus Sine to start polling data.
Poll Used to initiate a single poll.

The following information can be found on tabs located on the device form:

R/W Stats Tab

Serial Send The number of send attempts to all serial devices.
(controlled by the RS232 rate)
Serial Receives The number of serial packets received from each device.
Time Last Packet Received The time the last packet was received.
(The amount of time in seconds that can elapse before a page or email will be sent. This is setup in the ~~System Setup.~~
Errors The number of missed packets.
% The percentage of packet errors.
Decode Errors The number of packets received but could not be decoded.

Raw Data Tab:

Displays the name and the raw data from each device. If the device is an analog device, the units will be millivolts *(i.e. 4000 mv = 4 volts).*

Note: *If valid data is not received in the amount of time setup in the System Setup, the data value will be set to -4000 mv. This ensures that the last data received does not remain in the array and cause a false reading on the meters.*

Database Tab:

Shows the data as it is being recorded. This data is stored in the D:\stations\Your Station\trend folder. This data is used to create reports. This data can also be viewed by using Paradox. By using the Report Generator, this data can be exported in many different formats.

On the second tool bar the following is displayed:

The current database file name.
The current number of records. *(i.e. 1330/10000 means record 1330 is currently being written.)* When the count reaches 10,000, a new file will be created.
Create New Table. The current database will be closed and saved. A new database will be created.

Serial Data Tab:

Send Direct

By typing in commands in the Memo box and selecting the correct port, data can be sent to that port. If you want to send AS+RETURN (the command for polling data on a Weedtech device on address A), enter as #13 (#13 is ASC code for a carriage return). Hit the **Send Direct** button and this data will be sent to the selected port. Any data sent by the device will be displayed in the group box located on the left side of the form.

Seriel Port

Shows data received on any open comport.

Port

Used to select the port to send the direct data to.

Comport Status

Yellow indicates data flow on the port.

Telnet Tab:

Shows data received on any open Telnet port. Telnet ports are set up on the Port form Edit>Hardware>Port.

Menu Functions:

Release Slow Polling

Plus Sine enters the edit mode any time the edit menu is accessed. The RS232 rate is increased to 5 seconds to reduce overhead during edits. The "Release edit mode (slow poll)" button sets the RS232 rate back to the value you have set in the system setup form.

Reset Analog Devices

Sends a "reset alarms" to all Weedtech Analog input devices. If the device has entered an alarm state, the state will be cleared. You can tell if an analog device has entered an alarm state if the Error count is negative (more received than sent). A device may go into an alarm state if there is a bad data packet and the device misunderstood it as a set alarm command.

Reset Status Grid

Resets all the information on the R/W Stats Tab, including "Send", "Receive", "Error Count" and "Decodes Errors".

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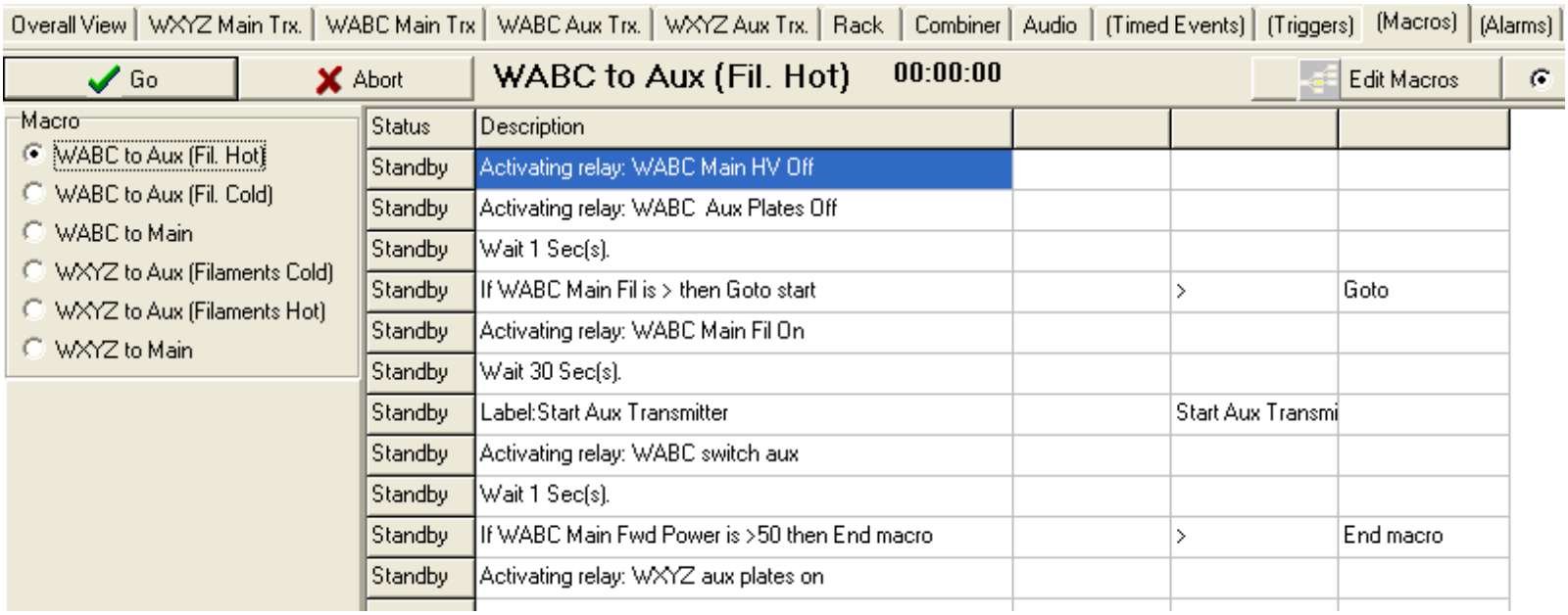
Macros Tab

Edit Macro



Marco List
List of Macros. Select a macro to run, then press the Go button to execute the macro. To abort the macro, press the Abort button.

Go Button Used to execute the selected macro.

Abort Button Used to abort the selected macro.
Macro Name The name of the selected macro that is written at the top of the report.
Time remaining If the macro is at a Wait line, this is the amount of time before the wait is complete.

State The state of the line.
Standby The line is ready to be executed by a User , Timed Event or Trigger.
Waiting The line is a Wait line, and the line is waiting for time to expire.
Done The line has been executed.

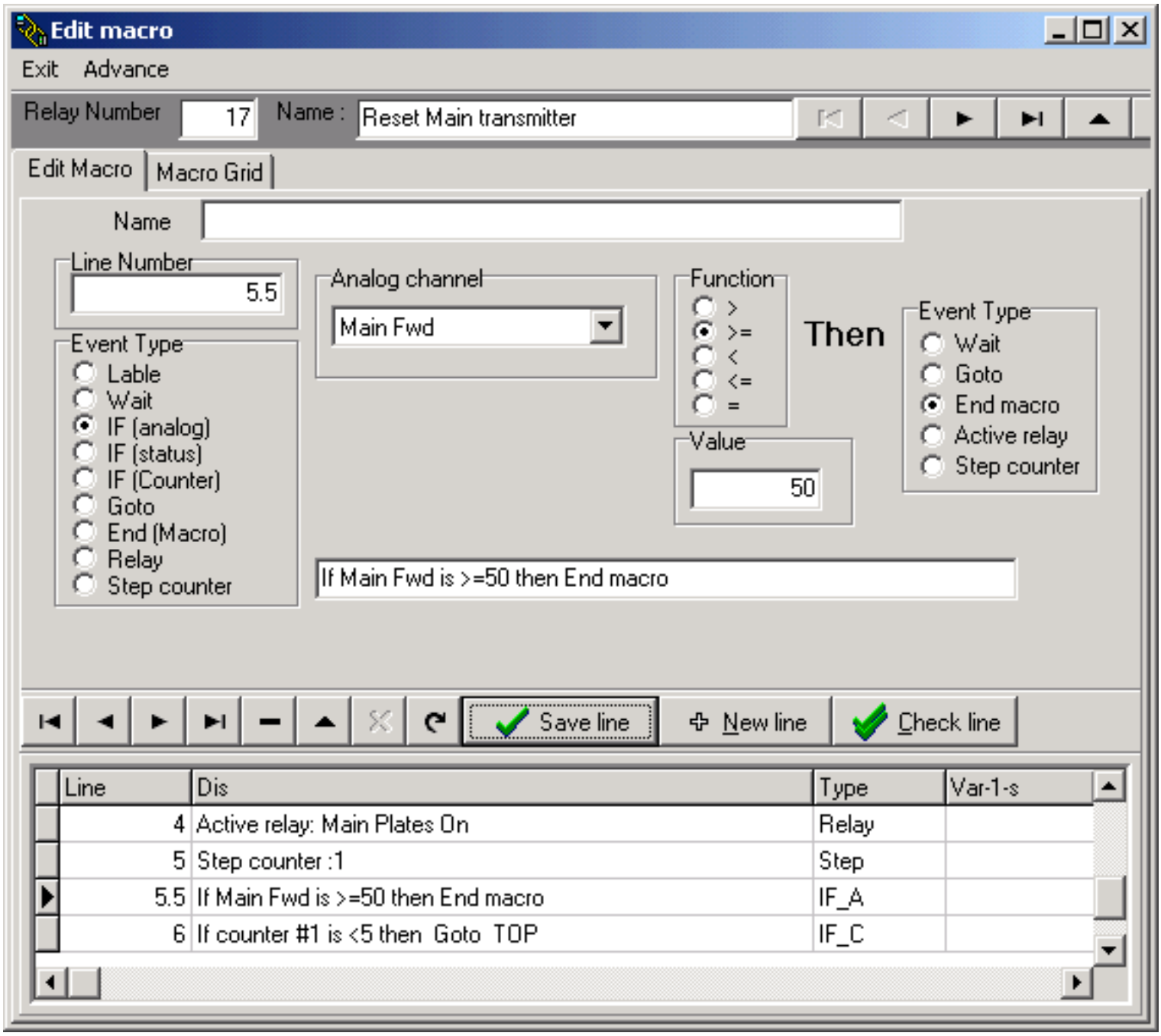
Description The description of each line of the macro.

Edit Macros A quick way to jump to the Edit Macrowindow.

Edit Relays A quick way to jump to the ~~Edit Relay~~ window.

Current Macro Line The highlighted line of the macro which indicates the point (line) where the macro is currently located.

Path:Edit > macros Table of Contents



How to Create a Macro

A Macro is a series of commands and functions that are stored as a relay and can be run whenever you need to perform the task. When you create a macro, Plus Sine stores information as a series of Macro Lines. You then run the macro by attaching it to a button (relay) on a Tab, placing it in the Button Box, as a Trigger or as a Timed event.

Use the following pull down menus: Edit > Macros

1. Press the New Macro Button and Plus Sine will generate a new Relay Number and a Relay Name like "*New macro 2/24/2008 10:39:01 A*".

2. Replace this name with a common name like "Recycle Main Transmitter".

Adding Lines
a. Press the New Line button found at the lower center part of the page.
b. You will then be prompted to input the new line number.
Note: The line number is used to control the order of events in a macro. The macro will start at the top and move toward the bottom. It will jump from line to line as determined by your macro. A line number can be any real number between 1 and 65000. If you need to insert a line between line number 3 and line number 4 you can create new line number like 3.2, 3.5 etc.

Sample Macro

3. Enter the following fields:

Event Type
Describes the type of event. *(i.e. "Relay" for a event that activates a Relay)*
Label
A label is used to mark a point you would like your macro to jump to *(i.e Top, Recycle Main, Bring Auxiliary on Line)*.
Wait
A wait tells the macro to pause a certain amount of time in seconds.
IF (analog)
Used to check an analog value and then perform a specific action.
IF (status)
Used to check the state of a status input and then perform a specific action.
IF (Counter)
Used to check the point of a counter and then perform a specific action.
Goto
Used to jump to a label.
End (Macro)
Used to end the macro.
Relay
Used to activate a relay (cannot be used to activate another macro).
Step Counter
Used to increase a counter by increments of one.

Sample Macro

Add your next line

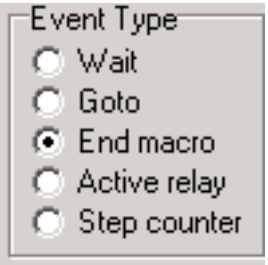
Functions
> Greater than{If the channel is greater than the user defined limit, then the function will be executed}
>= Greater than or equal to {If the channel is greater than or equal to the user defined limit, then the function will be executed}
< Less than{If the channel is less than the user defined limit, then the function will be executed}
<= Less than or equal to {If the channel is less than or equal to the user defined limit, then the function will be executed}
= Equal to {If the channel is equal to the user defined limit, then the function will be executed}

Event Type lists the types of functions that can be executed if the IF Statement is true.

~~Sample Macro~~

Value The value of an Analog Channel used in an IF statement (to check to see if the IF statement is true or not).

Event Type (Actions)



Wait If true then wait a certain amount of time.
Goto Jump to another line defined by a label.
End macro Exit macro.
Activate relay Turn a relay on.
Step counter Turn the step counter on and increase by increments of 1.

Time in second(s)
Part of the wait action. The time in seconds to wait before proceding to the next line.
Goto Label (Action)
The label to vector the macro to if the **IF Statement** is true.
Relay to Activate
The relay to activate if the **IF Statement** is true.
Counter To Increment (Action)
Identify the counter you want to increment if the **IF Statement** is true.

~~Sample Macro~~

Line Description
This is the simple text or common name of the function. All the variables in the function are combined to produce a simple text explanation of the line.

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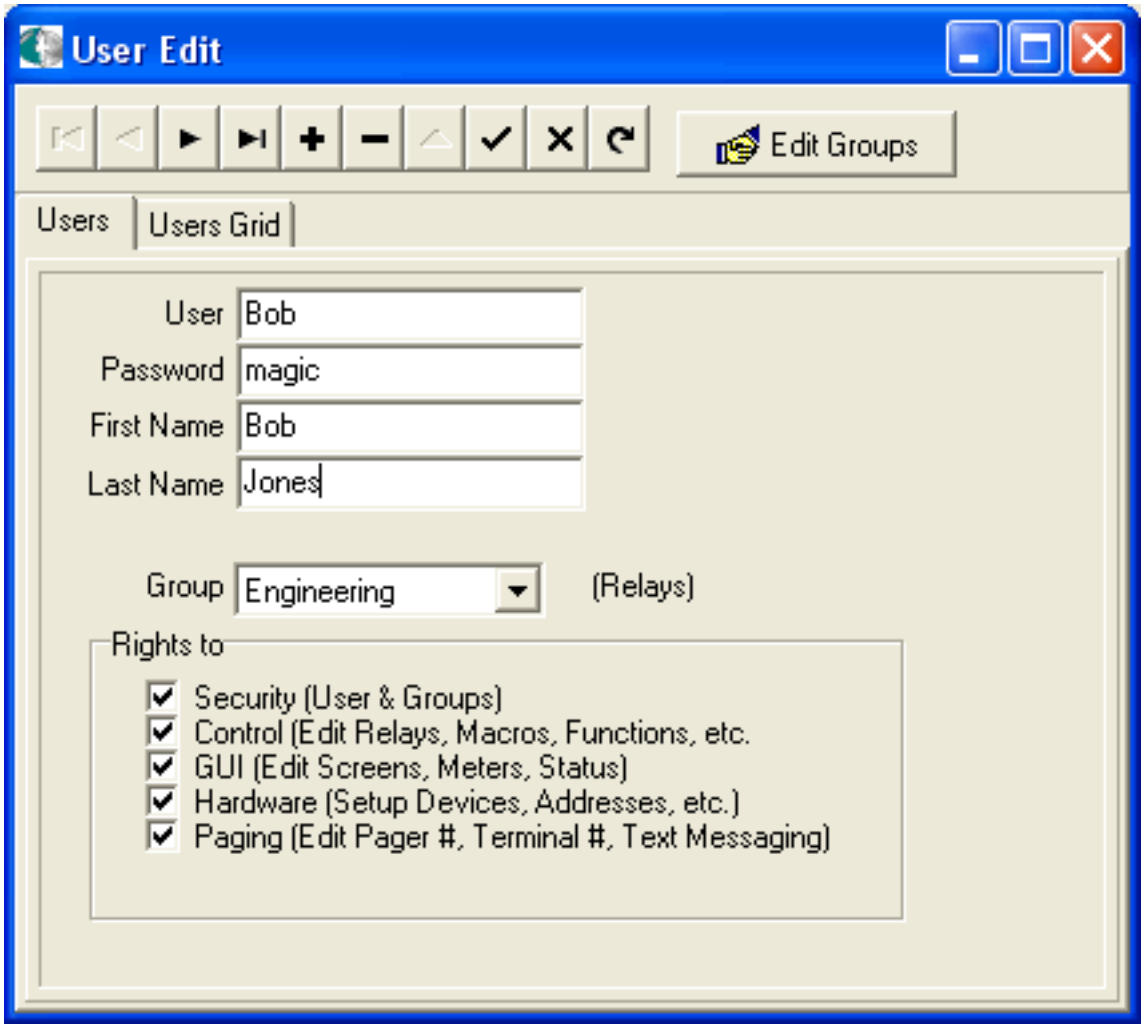
User Setup



Group Setup

User
The name of the user. This will be the name used to log in, and this will be the name that will be logged in the event log when the user activates a relay, etc.

Password The user password that is used to log into the system.

First Name The first name of the user. This is used to manage the user information.
Last Name The last name of the user. This is used to manage the user information.

Group
The group that the user is a member of. This is used to control relays.
Group edit

Security (User & Groups)
Allows the user to edit, add, and delete users and groups.
Control (Edit Relays, Macros, Functions, etc.)
Allows the user to edit, add, and delete relays, macros, functions, etc.
GUI (Edit Screens, Meters, Status)
Graphical User Interface that allows the user to edit, add, and delete screens, meters, and statuses.

*User Setup

Hardware (Setup Devices, Addresses, etc.)
Allow the user to edit, add, and delete devices, addresses, and ports.
Paging (Edit Pager #, Terminal #, Text Messaging, etc.)
Used to edit, add, and delete pagers, paging groups etc.

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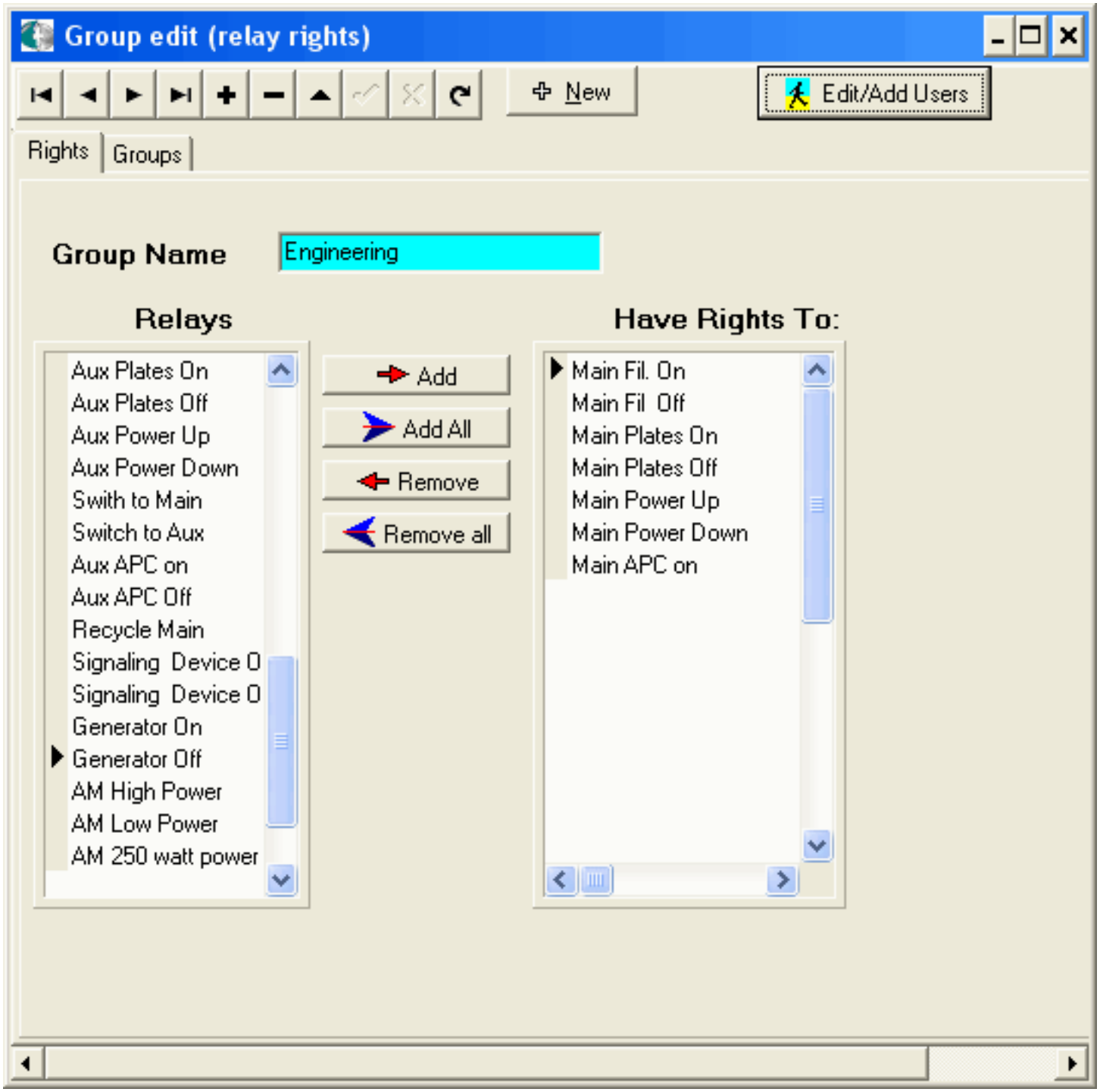
Groups



Group Name A group of users (i.e. Engineers, Operators, Etc.) that needs a common group of relays.

Relays A list of relays that are available for a user group.

Have Rights To A list of relays that this group has rights to use

Add Add the highlighted relay to the user group's Have Rights To list.

Add All Add All relays to the user group's Have Rights To list.

Remove Remove the highlighted relay from the user group's Have Rights To list.

* Groups

Remove All Remove all relays from the user group's Have Rights To list.

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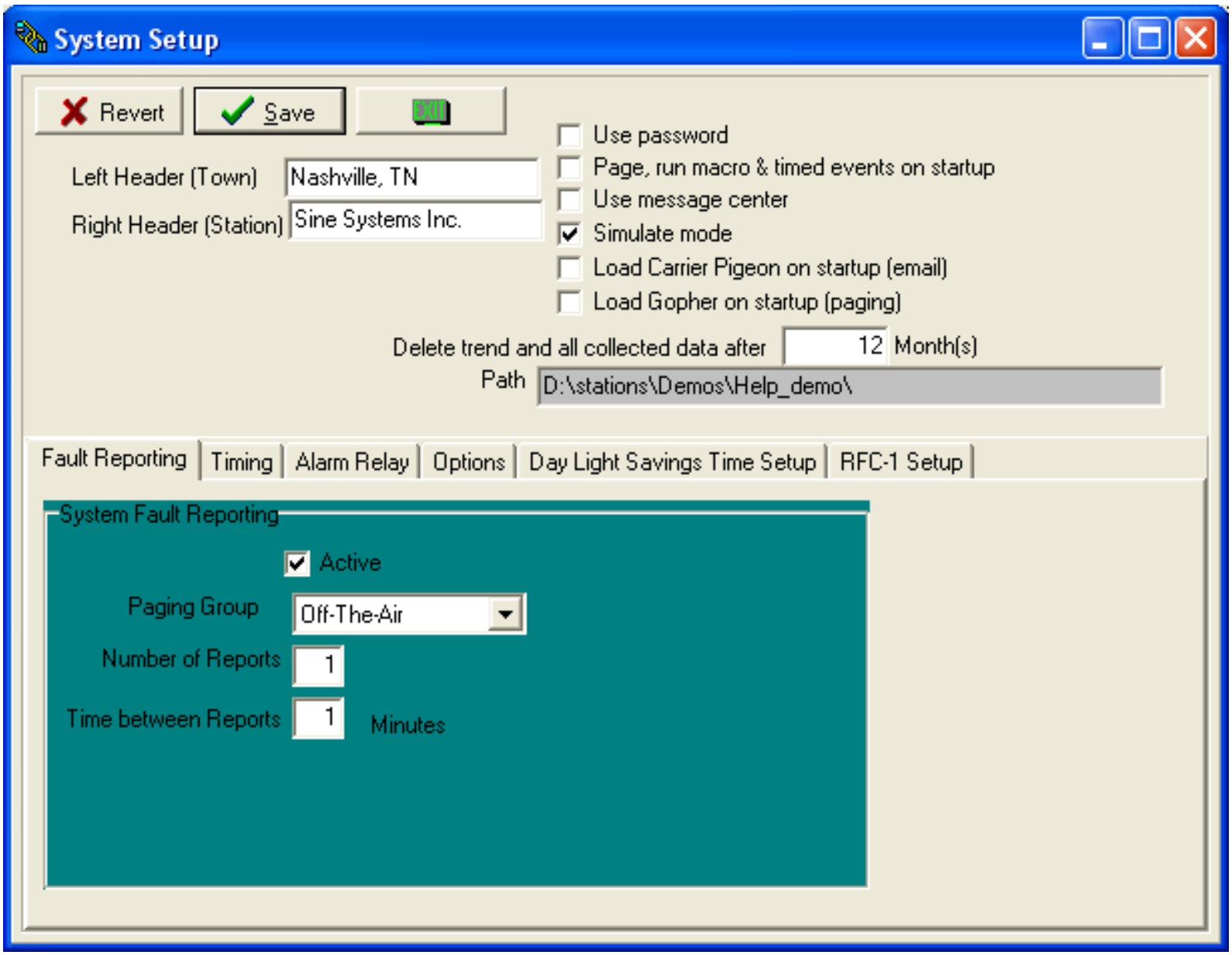
System Setup



Fault Reporting Tab Timing Tab Alarm Relay Tab Option DLST setup

Left Header (Town)
Normally used to display the city and state of the station.

Right Header (Station)
This is the header on the Overall View. This is also used to identify the site on pages, text messages and emails.

Page, Run Macro & Timed Events on Startup
If selected, then on startup, Plus Sine will run paging, macros and timed events. If not selected, then Plus Sine will enter into the suspend event mode. The suspend event mode may be canceled by unselecting the suspend event box.

Use Passwords
If selected, Plus Sine will require a user and password to activate relays or edit functions

Use Message Center
This is only used if you have the Message Center Option for your Plus Sine. You can purchase the Message Center Option for your Plus Sine to allow you to display information on a message center *(like a BetaBrite sign)*. For more information on options available for your Plus Sine, visit PlusSine.com.

* System setup

Simulate Mode
Places Plus Sine in the simulate mode for demos and to check macros and paging without hardware attached. If hardware is attached the hardware is ignored (no polling is done).
Load Carrier Pigeon on Startup (Email)
Carrier Pigeon is the program designed to run with Plus Sine to enable email communication.
Load Gopher on Startup (Paging)
Gopher is the program designed to run with Plus Sine to enable paging.
Delete Trend and Collected Data After ____ Months
The amout of time in months that the Plus Sine will store all collected data *(i.e. trend chart data, alarm data, analog and status data)*. On the first day of the month, Plus Sine deletes files that exceed that period of time *(i.e. if you set this for 6 months, Plus Sine deletes January's data on July 1st)*.
Path
The path where Plus Sine data files are strored for this station.

Tabs

Fault Reporting Tab
Alarm Relay Tab
Timing Tab
Option
DLST setup

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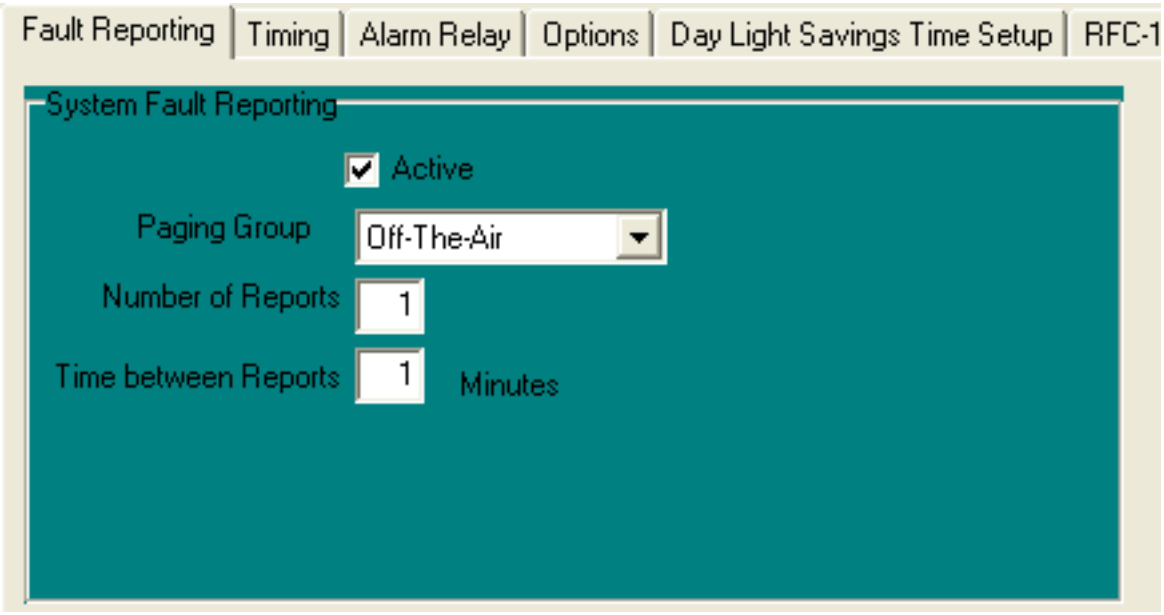
Fault Reporting



Back to System Setup

Fault Reporting Active
If checked, hardware faults will be sent to the Paging Groups.

Paging Group
The group to report the fault to.

Number of Reports
The number of times Plus Sine will report hardware faults.

Time Between Reports
The amount of time in minutes to wait between reports.

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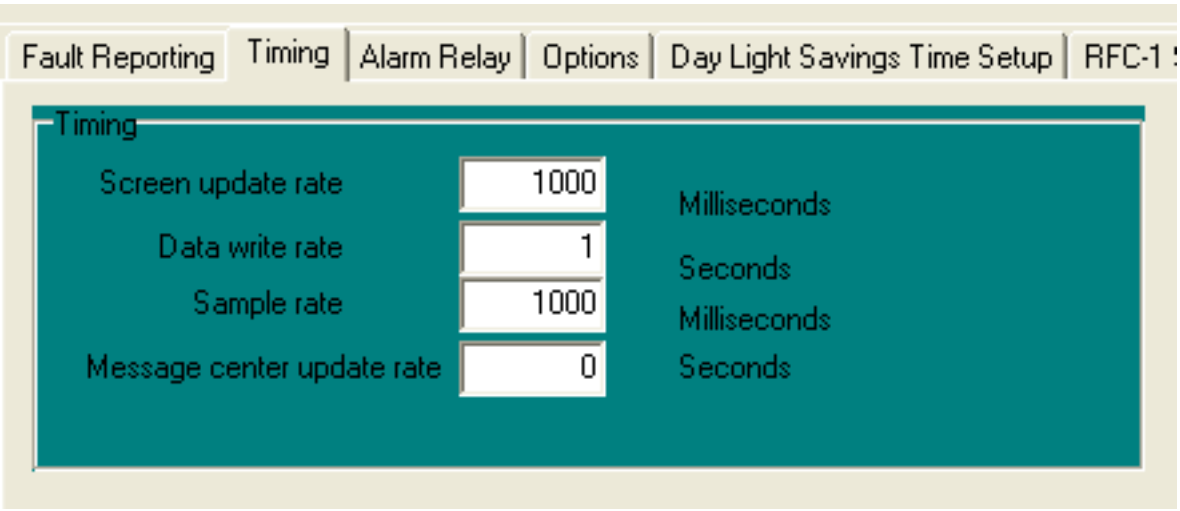
System Setup

Timing Tab



Back to System Setup

Screen Update Rate
The rate (in milliseconds) that the screen is updated. Normally it is set to 500 ms. It can be set higher on slower computers.

Data Write Rate
The rate in seconds to store a sample of the incoming analog and status data to the database file.

Sample Rate
The rate the hardware is sampled in milliseconds.

Message Center Update Rate
The rate in seconds between updates (normal is 45 seconds). New alarms will be updated immediately. Note: This is only used if you have the Message Center Option for your Plus Sine. You can purchase the Message Center Option for your Plus Sine to allow you to display information on a message center *(like a BetaBrite sign)*. For more information on options available for your Plus Sine, visit PlusSine.com.

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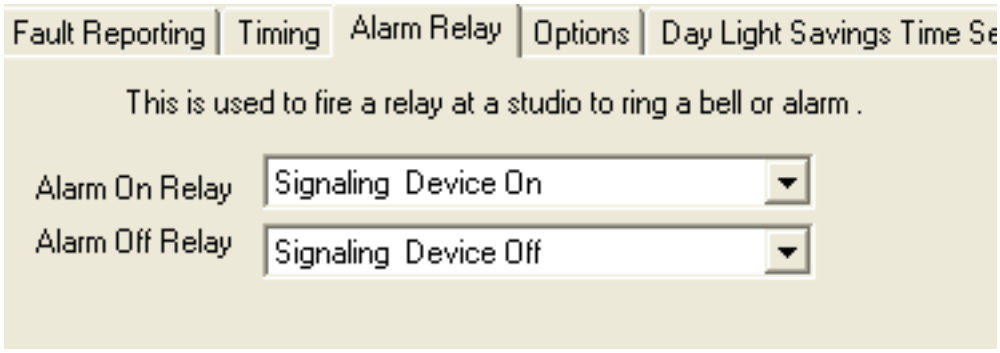
System Setup

Alarm Relay Tab



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Use Alarm Relay
If this box is checked and a signaling device is attached to Plus Sine, then this channel will activate an audible or visible alarm. For more information on signaling devices see Setting up Signaling Devices.
Alarm Relay Tab

Alarm On Relay The relay used to activate a signaling device.
Alarm Off Relay The relay used to deactivate a signaling device.

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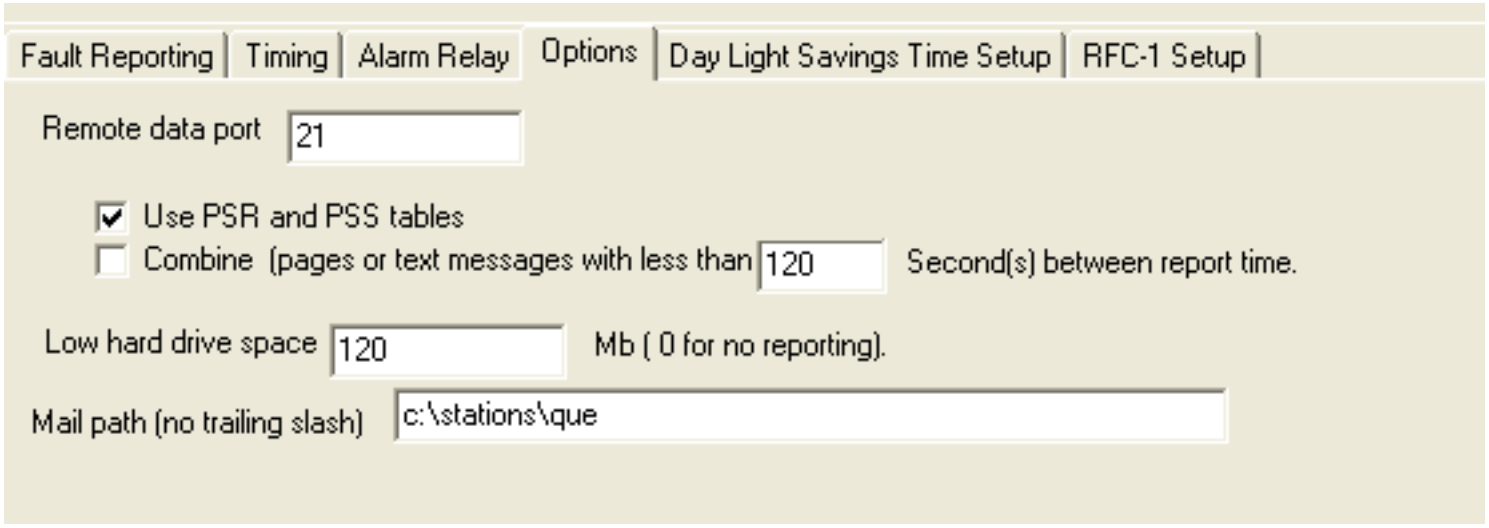
System Setup

System Setup Option Tab



Use PSR and PSS Tables

Check this box only if your AM station is authorized for pre sunrise and post sunset power levels. Once checked PSR (pre sunrise) and PSS (post sunset) columns will appear on the Sunrise/Sunset table.

Combine Pages

If this box is checked, Plus Sine combines all pages or emails within the amount of time specified. This is useful during the catastrophic failures when several pages or emails cue up quickly. *(i.e. If a page or email is to be sent at 8:10 and one is to be sent at 8:12 and the combined page time is set to 300 seconds (5 minutes) then the two pages will be combined.)*

Low Hard Drive Space

When the hard drive space drops below this level, a page or email will be sent to the paging group as defined on the fault report tab of the system setup.

Mail Path (No Trailing Slash)

The path where the outgoing mail server, Carrier Pigeon, and the paging terminal, Gopher, will locate the outgoing messages.
When an email is sent by Plus Sine, a text file will be dropped into the folder. Carrier Pigeon and Gopher will monitor this folder for new files. They will convert the file and Carrier Pigeon will send it as an email or Gopher will send it as a page .

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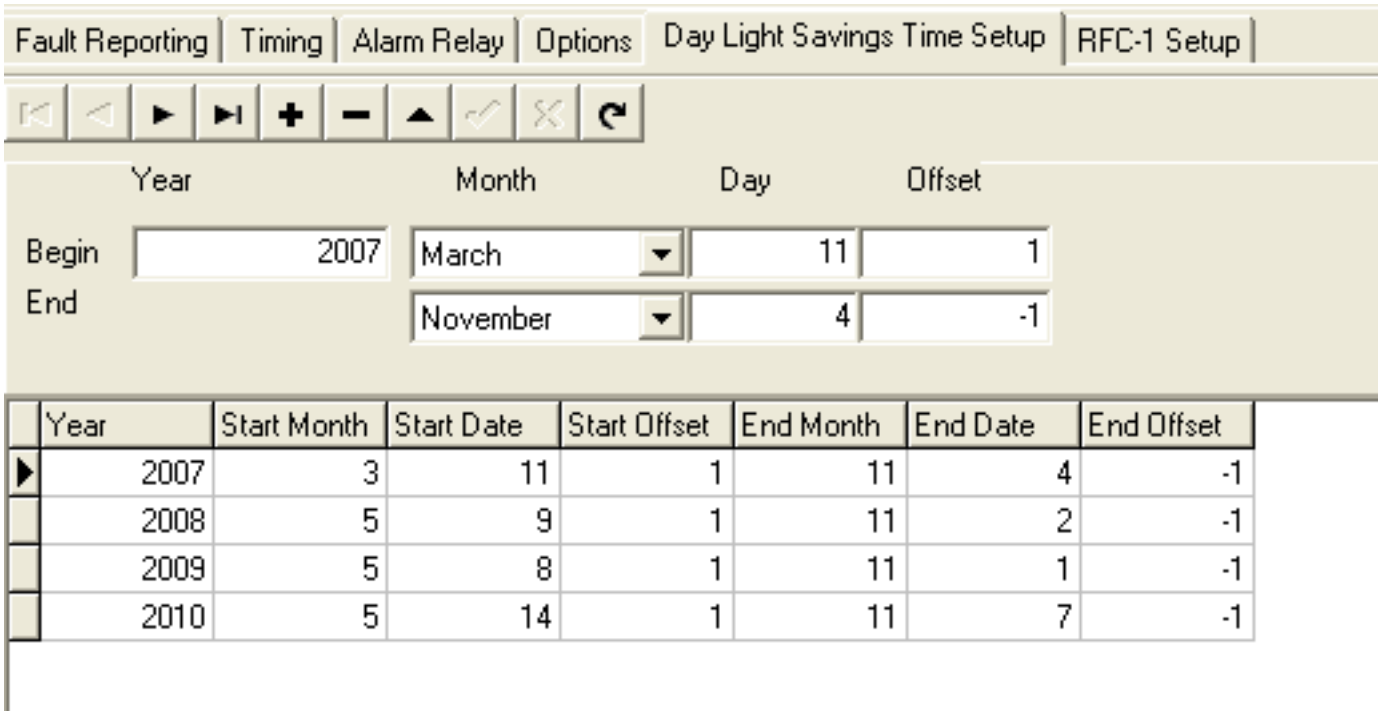
System Setup

System Setup for Day Light Savings Time (DLST)



Year	Start Month	Start Date	Start Offset	End Month	End Date	End Offset
2007	3	11	1	11	4	-1
2008	5	9	1	11	2	-1
2009	5	8	1	11	1	-1
2010	5	14	1	11	7	-1

Year
The year for the time shift.
Beginning Month and day
The month and the day that the DLST shift will occur.
Ending Month and Day
The month and the day that the DLST shift will end.
Beginning Offset
-1 to shift time back one hour. 1 to shift time forward 1 hour. 0 for no time shift.
Ending Offset
-1 to shift time back one hour. 1 to shift time forward 1 hour. 0 for no time shift.

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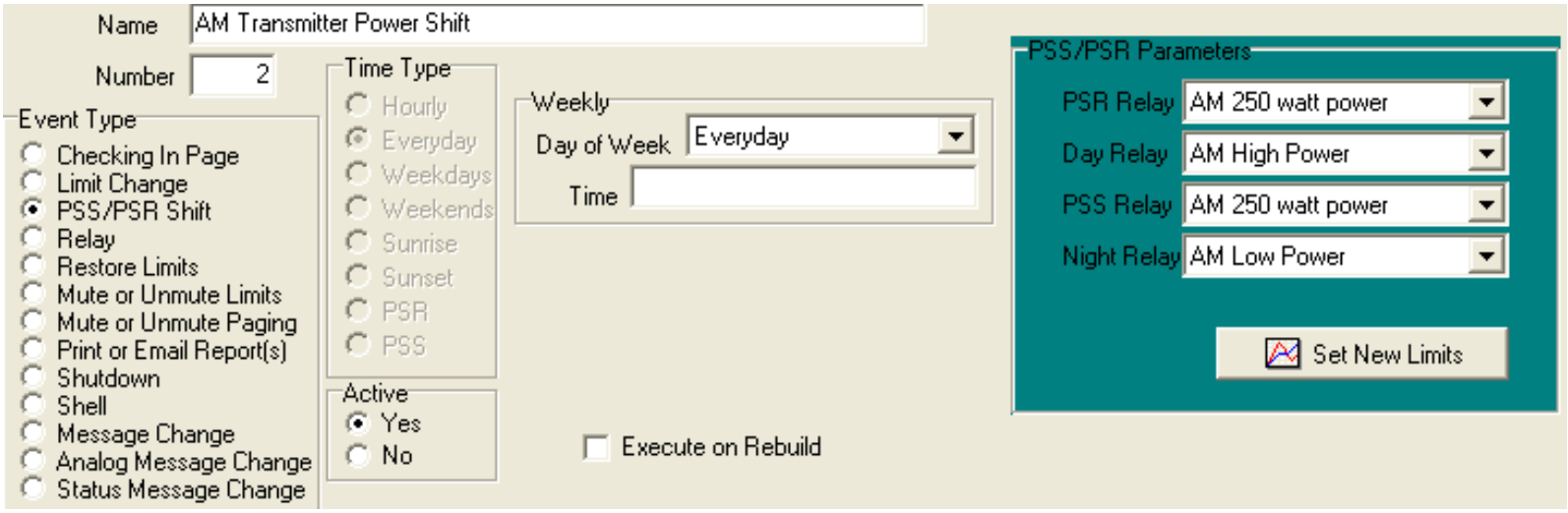
System Setup

Pre Sunrise (PSR) and Post Sunset (PSS) Tables



DLST setup

Number
Used as the key to link this record to another database. Do not alter this field.
Name
The name of the month for this record.
PSR Time
The pre sunrise time (The time at which a station may increase its power slightly before sunrise.)
Sunrise Time
The sunrise time as determined by the FCC.
Sunset Time
The sunset time as determined by the FCC.
PSS Time
The pre sunset time (The time at which a station must decrease its power slightly before sunset).

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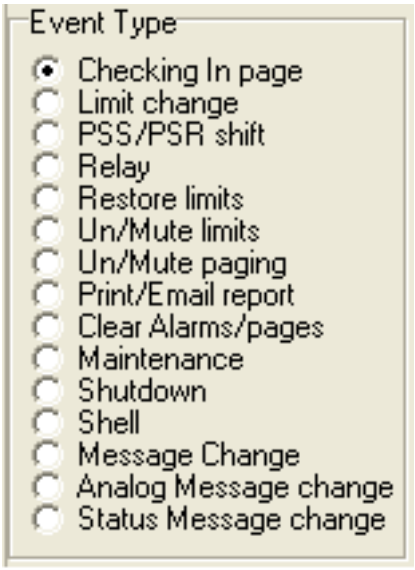
Timed Event Edit

Event Type



Checking In page
Limit change
PSS/PSR shift
Relay
Restore limits
Mute or unmute limits
Mute or unmute paging
Print/Email report
Clear Alarms/pages
Maintenance
Shutdown
Shell
*Message Change (option)
*Analog Message change (option)
*Status Message change (option)

*This is only available if you have the Message Center Option for your Plus Sine. You can purchase the Message Center Option for your Plus Sine to allow you to display information on a message center *(like a BetaBrite sign)*. For more information on options available for your Plus Sine, visit PlusSine.com.

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Mute Range Examples

Examples:

IN RANGE (1)
Upper limit is 100 %
Lower Limit is 90 %
The input is 95 %
The mute is Active

IN RANGE (2)
Upper limit is 100 %
Lower Limit is 90 %
The input is 105 %
The mute is Not Active

OUT OF RANGE (1)
Upper limit is 100 %
Lower Limit is 90 %
The input is 95 %
The mute is Not Active

OUT OF RANGE (2)
Upper limit is 100 %
Lower Limit is 90 %
The input is 105 %
The mute is Active

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Macro Edit

Sample Macro

01 Top {Label}
10 Increment counter 1 {Increment counter # 1 by 1}
20 Activate Main Plates On {Activate the Main Plates On Relay}
30 Wait 5 seconds {Wait 5 seconds to allow the transmitter to become stable before checking power}
40 If Main Forward Power > 50% then exit Macro (If the Main is back on line, exit macro}
50 If Counter 1>3 then goto Bring Auxiliary On Line {3 attempts to recycle the main. 3 attempts have failed. Bring the Auxiliary on line}
60 GotoTop {Goto the Top and try to recycle the Main again}

110 Bring Auxiliary On line {Label}
120Activate Auxiliary Filaments On {Activate the Auxiliary Plates On Relay}
130 ActivateMain Filaments Off {Make sure the Main is off }
140 Activate}RF transfer switch to Auxiliary {Rotate the RF switch}
150 Wait 30 seconds {Wait 30 seconds to allow the filaments to warm up}
160 Activate Auxiliary Plates On {Activate the Main Plates On Relay}
200 Exit Macro {End}

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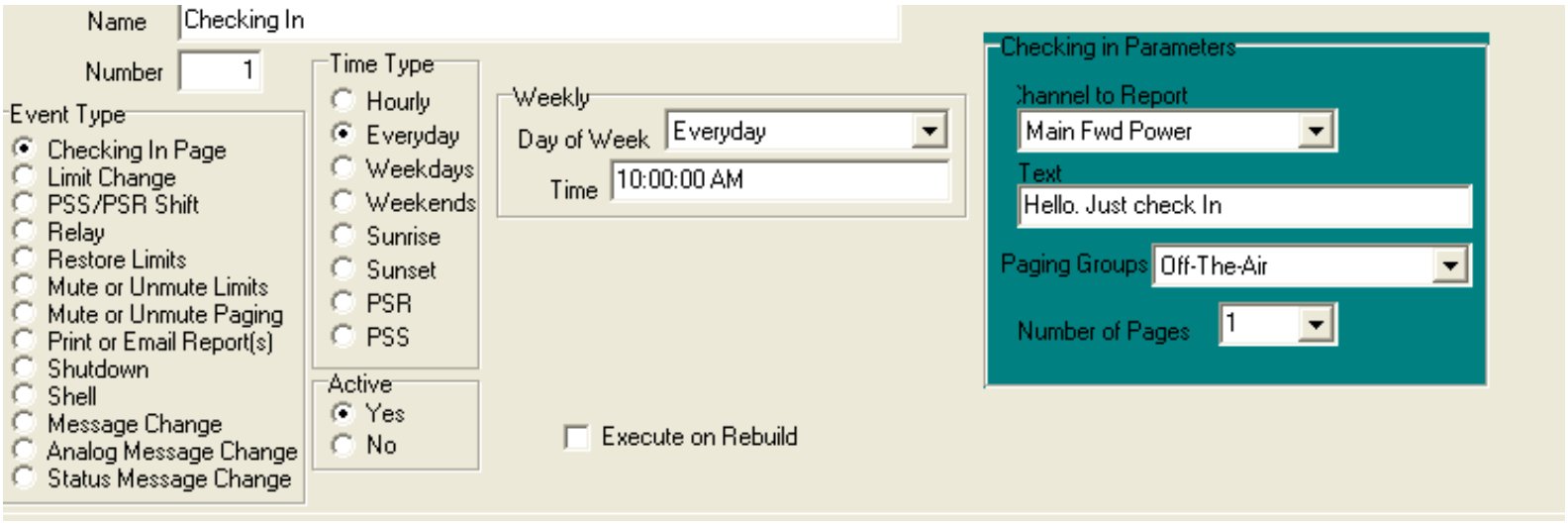
Timed Event Edit

Timed Event - Checking In Page

A checking in page is used to report an analog channel once a day, week, or month to someone via email or pager. This can be used to report the output power of the transmitter to the engineer. A typical page would be "Site:WABC Just checking in. Forward Power is at 100.5 %. Thanks"



Channel to report The analog channel to report when emailing or paging.
Text The text to print in the email or page *(i.e. Just checking in)*
Paging Group The Paging Group to send the page to.
Number of pages How many people to page based on the paging group.

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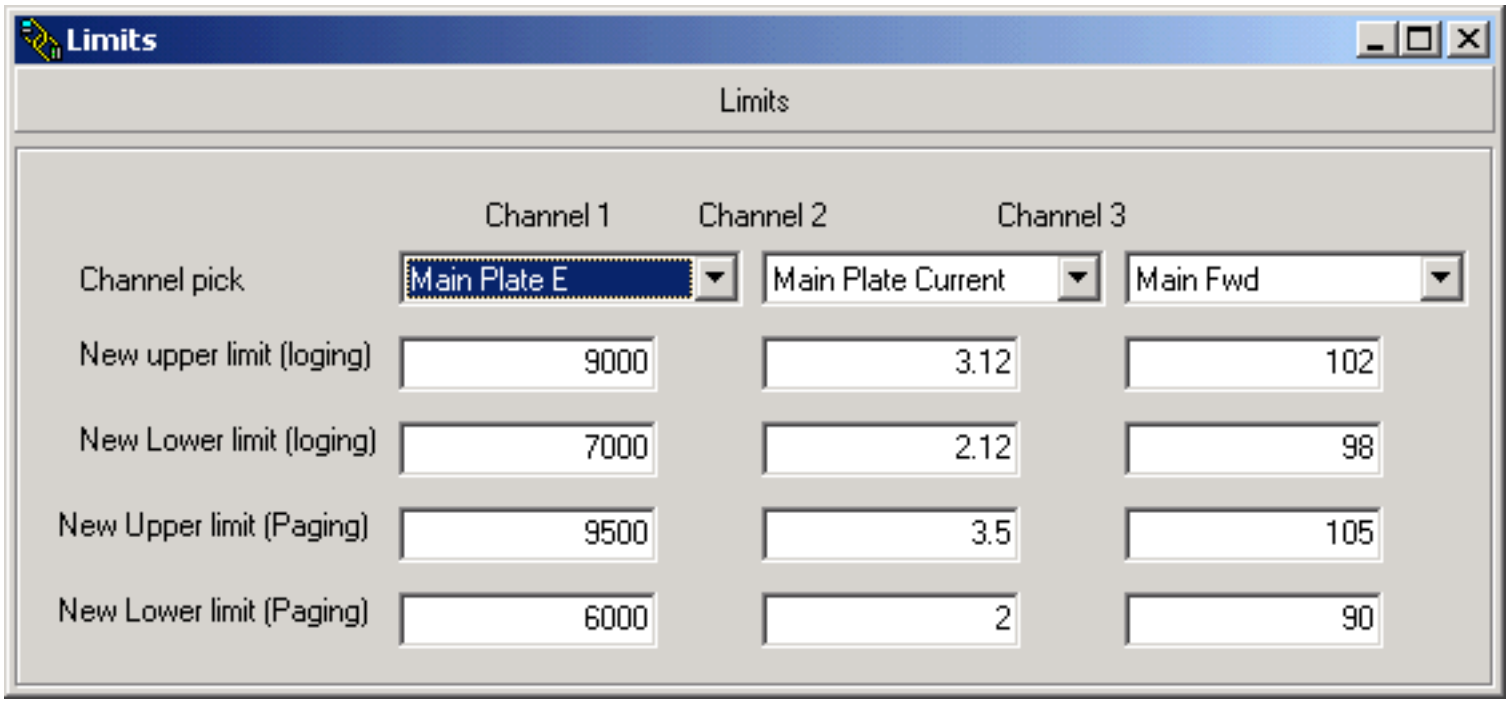
Timed Event Edit

Timed Event Limit Change

A limit change is used to change the limits on as many as 3 analog channels at a time. New logging and paging limits can be set on the same event. This could be used to change tower light limits after dark.

Note. If over 3 channels need to be changed . Enter multiple events.



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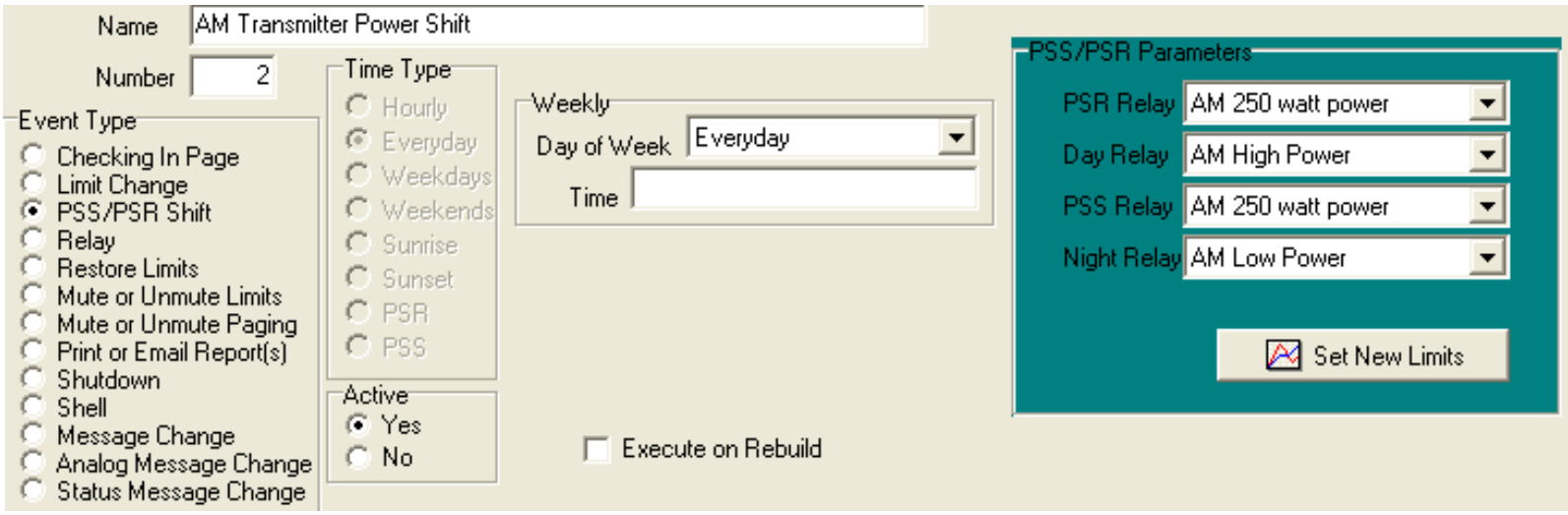
Timed Event Edit

Pre Sunrise (PSR) and Post Sunset (PSS) Shift



This event allows an AM station to adjust its power at Pre Sunrise, Sunrise, Sunset and Post Sunset. Along with these relays new limits can be set for logging and paging.

PSR relay. This relay is used to set the transmitter to reduced power for pre sunrise operation. (300 Watts)
Day Relay This relay is used to set the transmitter to high power for day operation. (1000 Watts)
PSS relay. This relay is used to set the transmitter to reduced power for post sunset operation. (250 Watts)
Night Relay. This relay is used to set the transmitter to low power for night operation. (100 Watts)

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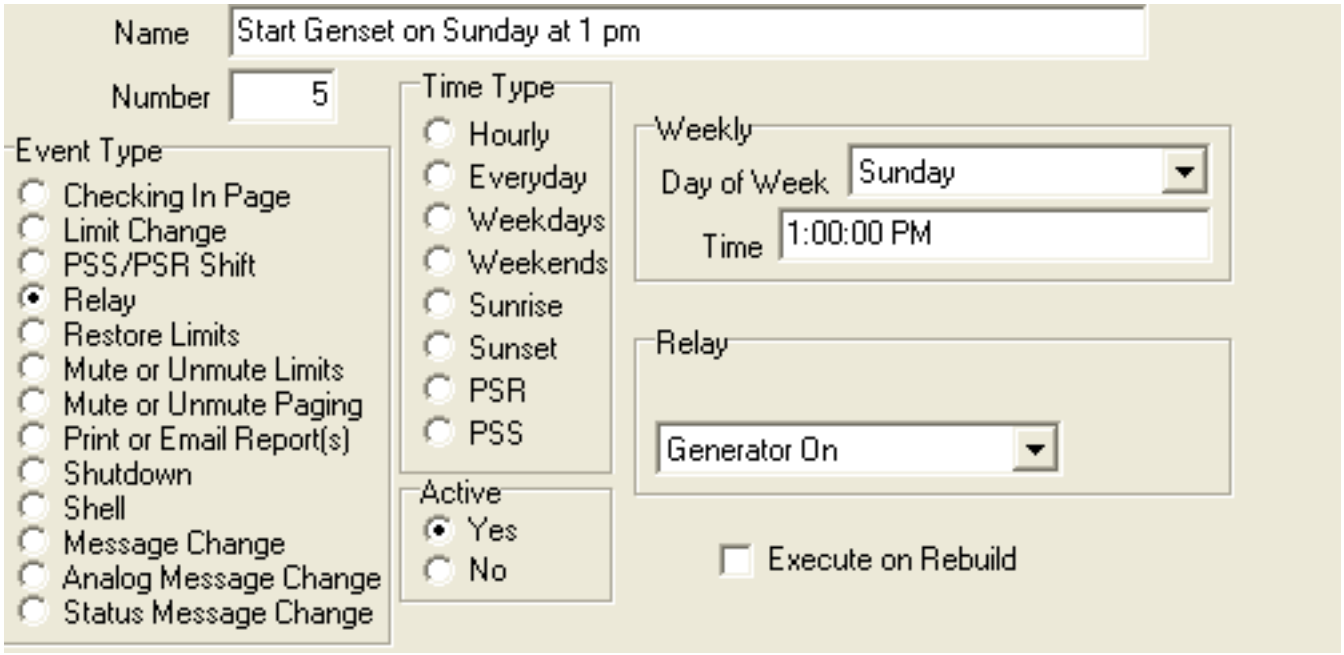
Timed Event Edit

Timed Event Relay



Use this event to activate a relay on a timed event. For example, you can activate your generator once a week by setting up the following two events:

1st event:

Event Type: Relay
Active: Yes
Timed event type: Weekly.
Day of Week: Sunday.
Time: 10:00:00 am
Relay: Generator Set On.

2nd event:

Event Type: Relay
Active: Yes
Timed event type: Weekly.
Day of Week: Sunday.
Time: 11:00:00 am
Relay: Generator Set Off.

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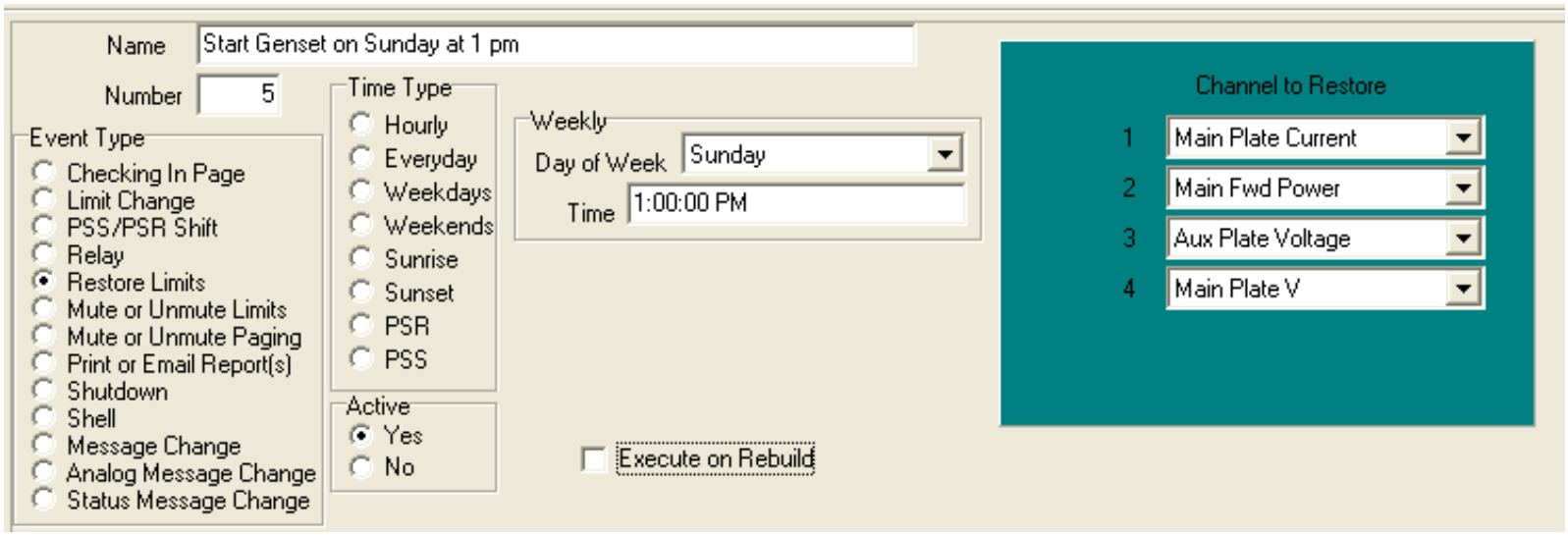
Timed Event Edit

Timed Event Restore Limits

Restore limits to the ones stored in the analog configuration. This is used to restore limits set by the Limit change event. As many as 4 limits can be restored with a single event.



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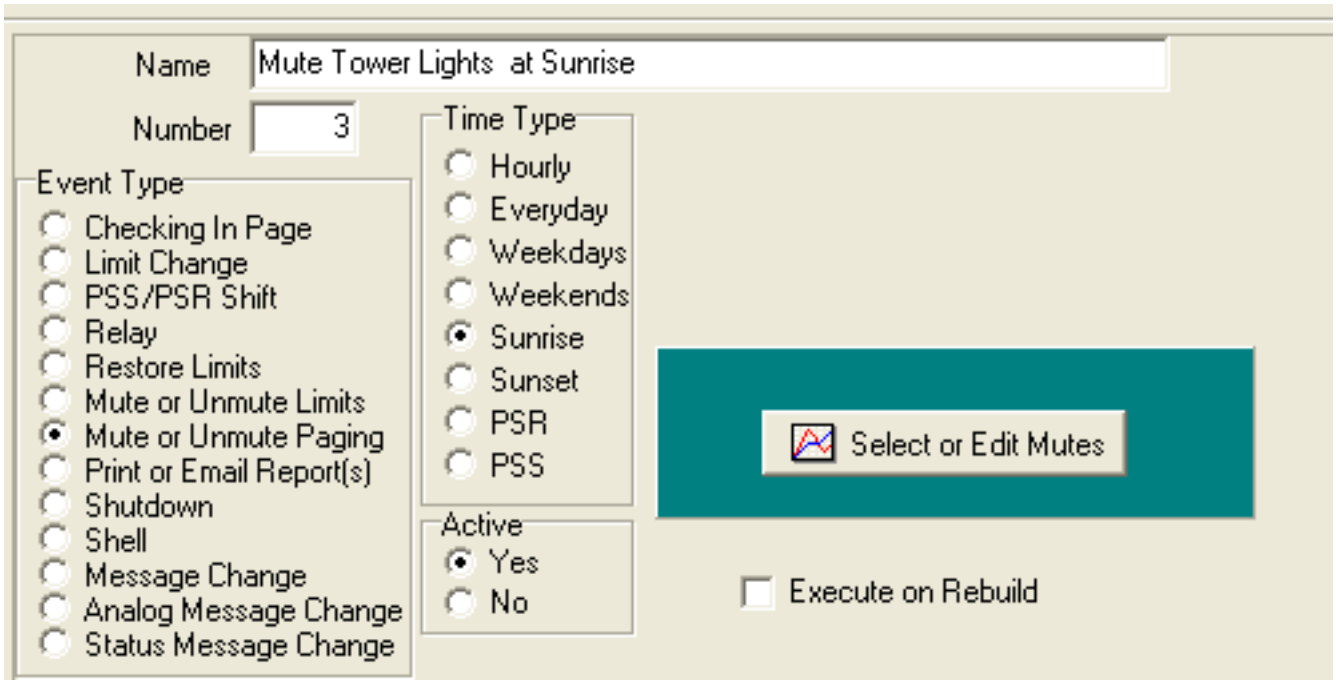
Timed Event Edit

Timed Event Mute or Unmute Limits

This is used to mute or unmute limits without changing the limits. *(i.e. This can be used to unmute tower light limits at night (event 1) and mute the tower light limits at sunrise (event 2))*



Timed Event Mute or Unmute Paging

This is used to mute on unmute paging limits without changing the limits. *(i.e. This can be used to unmute tower light paging limits at night (event 1) and mute the tower lights paging limits at sunrise (event 2))*

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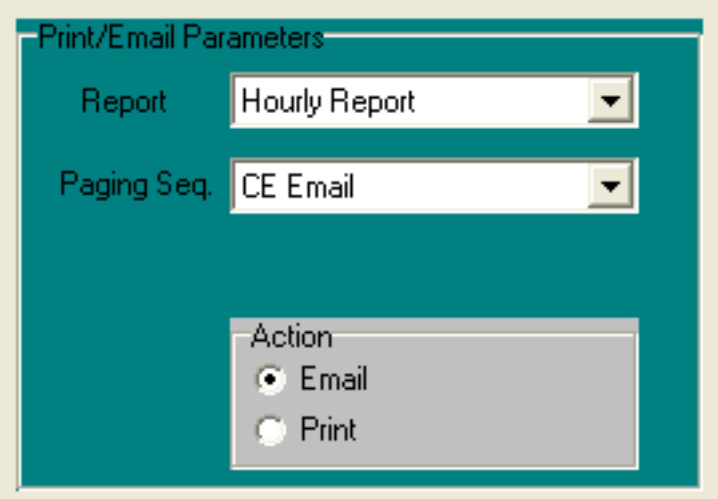
Timed Event Edit

Timed Event Print or Email Report



Used to print or send a report via email.

Report Name The name of the report generated by the Report Generator.
Paging Group The Paging Group to send the report to.
Action If print is selected, then the report will be sent to the default printer. If email is selected, the report will be emailed.

The report is setup by using the Report Generator.

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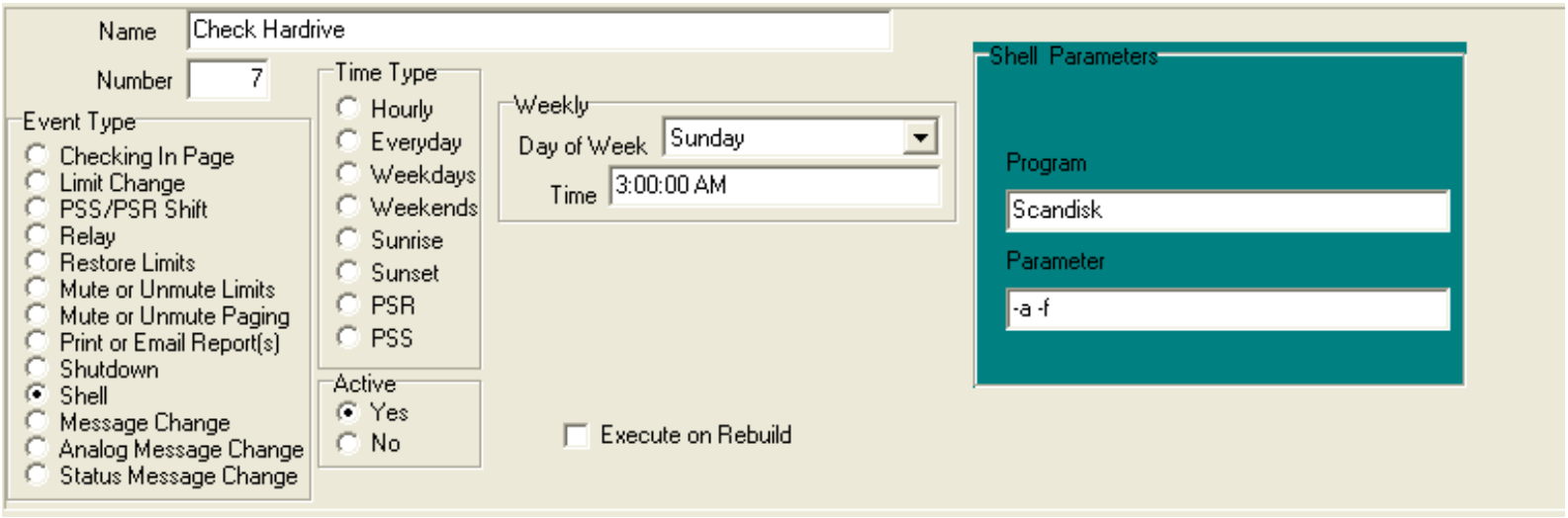
Timed Event, Others

Shell

A shell event starts another program while Plus Sine is still running.
1. Enter the path and the name of the file.
2. Enter any parameters required.



Clear Alarms and Pages

Clears all alarms and cleans the paging que. All channels in alarm will be reloaded after the delay time, and all pagers on alarm channels will start to page again.

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Timed Event Edit

Timed Event Shut Down

This function should be used at least once a week to flush the timed event que builder buffer. Set the event to shutdown Plus Sine at a predetermined time that will cause the least amount of inconvenience.