BURK TECHNOLOGY

Instruction Manual

Archer

Rev B (Firmware v 1.0.2)

Thank you for purchasing an Archer remote monitoring and control system. You can expect state of the art convenience and reliability that will provide years of satisfaction.

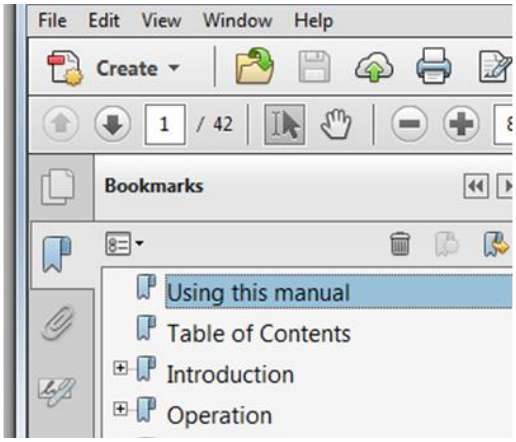
We've observed that installations go smoothly when the engineer plans the project and allows time for familiarization before jumping in.

We recommend setting up new units in a comfortable work environment before installing at the transmitter site. In addition to hardware familiarization, it will also be possible to do much of the configuration before going to the site.

USING THIS MANUAL

This manual is best viewed as a .pdf on a computer or tablet, as there are many hypertext links to help you get to the section you need. Since most of the initial setup requires a web browser, keeping a copy of the manual in .pdf form on the same machine is very natural.

The .pdf file has bookmarks to help with navigation, so be sure you have a current copy of Adobe Reader on your computer and have the Bookmarks enabled. You can download the most recent version at http://get.adobe.com/reader/.



To enable bookmarks, press and expand the desired section by pressing .

You can also jump directly to a section from the **TABLE OF CONTENTS**. Just click on the section or page number to go directly there.

Please take a few minutes to familiarize yourself with the organization of this manual, as it will likely save time later when you need to find a specific piece of information quickly. Throughout the manual, you will find hypertext links like this: **USING THIS MANUAL** Click on the link to go directly to the named section.

For starters, here is a quick set of links to the major sections of the manual:

USING THIS MANUAL	This section
TABLE OF CONTENTS	Fully expanded table of contents useable in .pdf or printed form
INTRODUCTION	Brief overview of Archer
OPERATION	A web browser is used to operate the unit.
INSTALLATION AND SETUP	Hardware installation and input/output connections
METERS	Web configuration for analog meter inputs
STATUS	Web configuration for status inputs
RELAYS	Web configuration for relay operation
APPENDIX A: SPECIFICATIONS	Archer specifications

TABLE OF CONTENTS

INTRODUCTION

Archer is a comprehensive monitoring and control system for remote tower sites and RF facilities. The system's specialized Push-To-Talk (PTT) based measurements make it ideally suited for use in mission-critical mobile radio applications. Sixteen meter inputs, sixteen status inputs and sixteen relay outputs are directly available on the rear panel. Operators can access the Archer unit from anywhere by PC or smartphone using the built-in web server or using AutoPilot® for Archer from a PC or Network Operations Center.

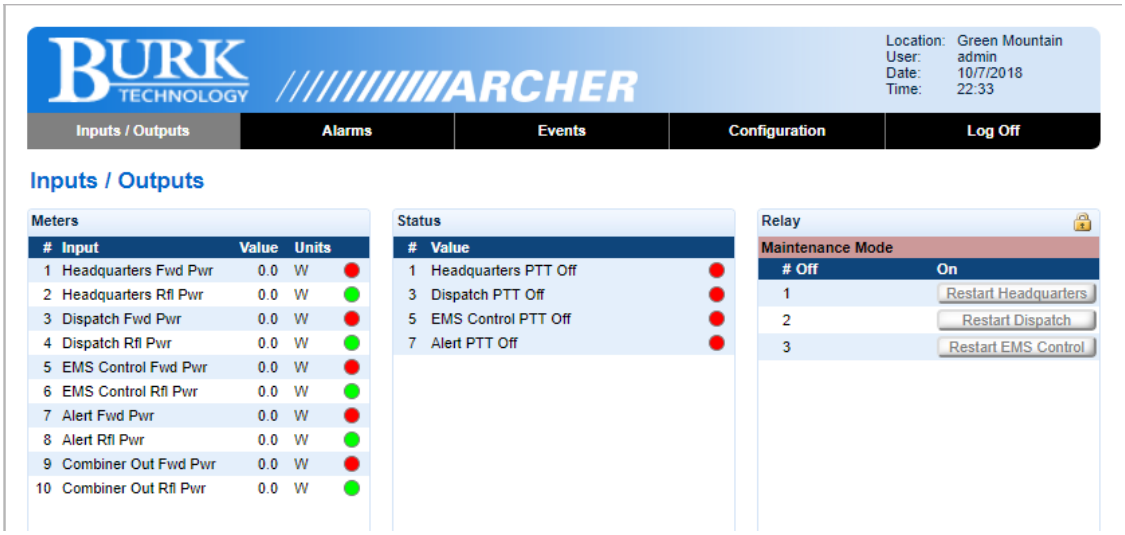
CONNECTIONS, CONTROLS AND INDICATORS

FRONT PANEL

The front panel has a Remote button and an Alarm LED.

REMOTE

The Remote button enables maintenance mode. This is a safety feature to prevent remote commands while service is being performed. This mode can only be disabled from the front panel. When the Remote button is pushed, the LED indicator above the switch turns red, and an indication on the web page (see below) shows that Maintenance Mode is enabled and that the relays are locked.

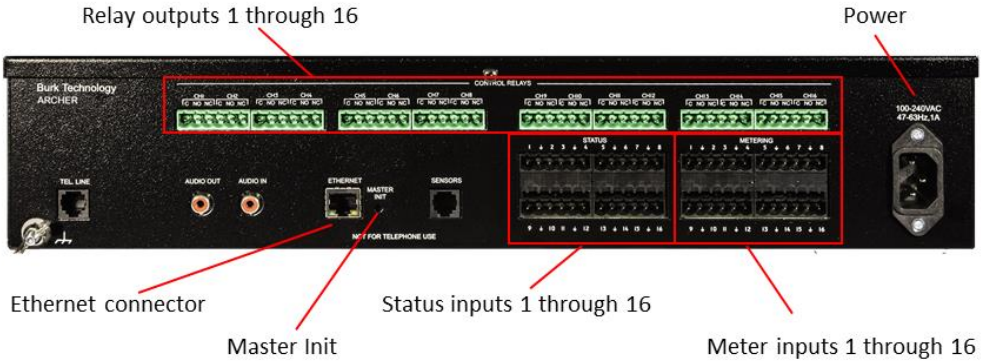


ALARM LED

The Alarm LED displays red when an alarm is present. When no alarm is present, the LED is green, indicating that power is on.

REAR PANEL

The illustration below shows the connectors on the Archer rear panel.



RELAY OUTPUTS

These are Phoenix-style plug-in connectors providing common, normally open and normally closed contacts for 16 relay outputs.

STATUS INPUTS

These are Phoenix-style plug-in connectors for 16 status inputs.

METERING INPUTS

These are Phoenix-style plug-in connectors for 16 metering inputs.

ETHERNET (RJ-45)

The Ethernet jack connects the Archer to the LAN/WAN for communications with the user.

MASTER INIT

This button resets the unit to its factory default setting. This includes setting the IP network configuration to DHCP with the default hostname ARCHER. Press the recessed push button until the front panel LEDs turn amber. Upon completion, the LEDs will flash.

POWER

This is a standard IEC power entry module. Connect to 100-240VAC, 47-63 Hz. Replace built-in fuse with same type and value.

UNUSED CONNECTORS

The following connectors are not used: TEL LINE, AUDIO OUT, AUDIO IN, and SENSORS.

USER ACCESS

WEB SERVER

Archer includes a built-in web server for managing remote sites via web browser. From the web page of Archer, you can monitor and operate your unit without downloading any software to your PC. The entire initial configuration is done via a web browser. The Configuration tab of the web page provides access to metering, status, relay settings, calibration, user security, time and date settings, alarm notifications, and more.

Note: Only administrators have access to the Configuration tab.

The web page is accessible by entering the hostname or the IP address of the Archer in your web browser. For more information on using the web interface, click or turn to **NAVIGATING THE WEB PAGE**.

The web server also provides connectivity to compatible mobile devices. To access the mobile web display from your mobile device, enter the IP address or hostname followed by */mobile/*. Click or turn to **SMARTPHONE WEB PAGE**.

AUTOPILOT® FOR ARCHER

Using **AUTOPILOT FOR ARCHER**, you can monitor and control sites in real time, automatically log site parameters, automatically print or email reports, and build custom screens to tailor the software to your exact needs.

FIRMWARE UPDATES

Periodic updates to Archer firmware along with release notes are made available on the Burk Technology website. To be notified when new versions are available, visit www.burk.com, select the Support page, and sign up for email updates.

SYSTEM SECURITY

Archer uses HTTP authentication to secure the web pages. To avoid exposure to excessive network traffic, installation behind a router or firewall is required. The web server can operate on any port, allowing the firewall to block Port 80, if desired.

INSTALLATION AND SETUP

A successful installation depends on preparation and proper sequence. It is good practice to perform a complete setup at the bench and then install the equipment at the transmitter site, connect I/O, and calibrate. Before beginning installation and setup, you will need the following items.

- Archer monitoring and control unit
- A computer with web browser
- An available port on an existing LAN

REAR PANEL CONNECTIONS

INPUTS AND OUTPUTS

Connect the inputs and outputs to the rear panel using the supplied phoenix style plug in connectors.

Note: Status and analog inputs share one ground between 2 channels.

ETHERNET

Connect the Archer port marked ETHERNET to your LAN/WAN using a CAT5 cable.

NETWORK CONFIGURATION

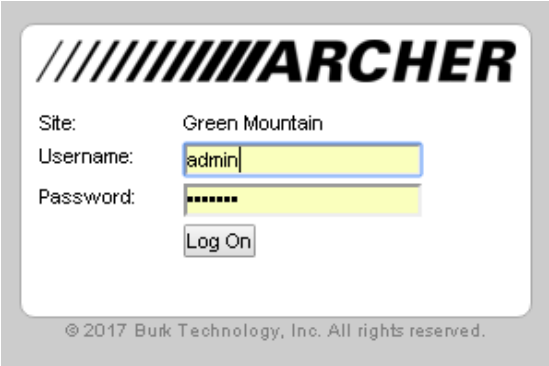
INITIAL CONNECTION USING DHCP

Archer uses Dynamic Host Configuration Protocol (DHCP) as its default method for obtaining an IP network address. New Archer units or units that have had a master initialization are enabled for DHCP, with the default hostname ARCHER.

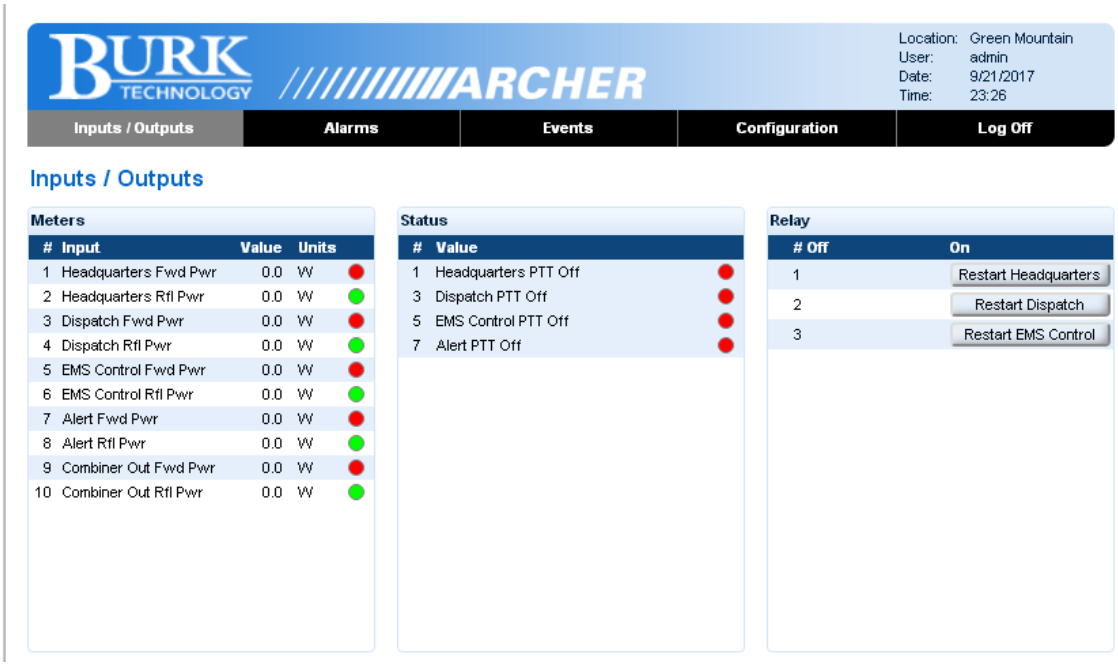
Connect the Archer unit to your LAN and apply power. If this is the first power-up for a new unit or the first network connection after execution of a master-initialization, the Archer will issue a DHCP request for an IP address. If the network supports DHCP functionality, a dynamic IP address will be assigned to the unit. To access the unit, launch a web browser and enter the hostname followed by the forward-slash symbol: ARCHER/

The screen shown below will be displayed, requiring you to assign an administrator password for the Archer unit. “Password” in any combination of upper or lower case letters will not be accepted.

After supplying and saving the new password, you will be directed to the Archer login screen. Log into the admin account using the password you assigned above.



After logging in, the Inputs/Outputs screen will be displayed.



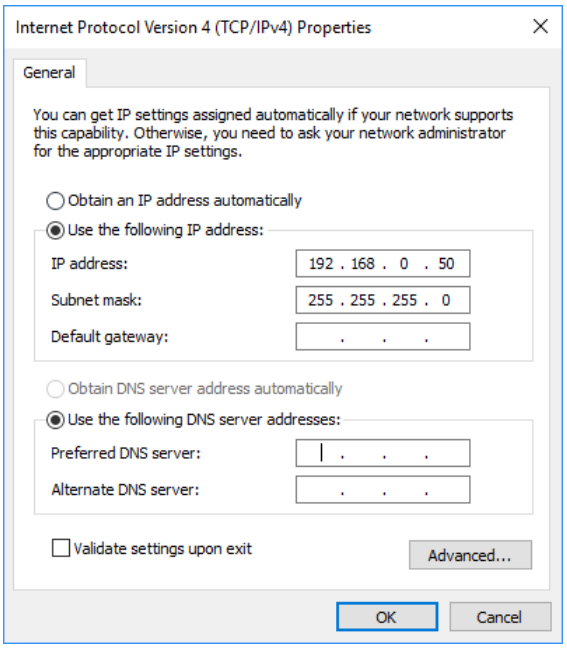
Note: If the login page is not displayed or the browser indicates that the page cannot be found, it is possible the connected network does not support DHCP. In this case follow the steps outlined below for “Initial Connection without DHCP”.

INITIAL CONNECTION WITHOUT DHCP

If your network does not support the DHCP protocol, the Archer unit's request for a dynamic IP address will fail. If this happens, the Archer will assign itself the default static IP address of 192.168.0.100. To access the unit, it will be necessary to connect your PC directly to the Archer using a crossover LAN cable or a simple Ethernet switch.

In addition, your PC's internal network interface must be set to a static IP address of the form 192.168.0.x. To set the IP address, open the Windows Control Panel, search for *Change Ethernet Settings*, select *Change adapter options* then select *Local Area Connection.*

Navigate to the Internet Protocol Version 4 (TCP/IPv4) Properties dialog box as displayed below.

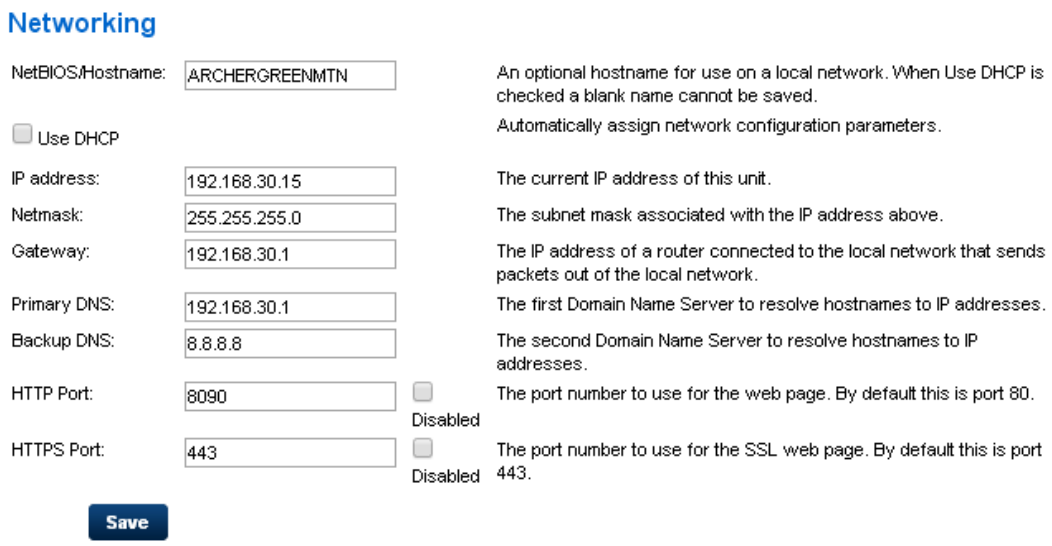


Select **Use the following IP address:** and enter an address of the form 192.168.0.x, where x is any value between 1 and 255 except 100, which is the Archer default IP address. Also, set the subnet mask to 255.255.255.0, as shown above, and click **OK**.

Now launch a browser and enter 192.168.0.100 in the address field. A screen requiring you to set the administrator password will be displayed. Assign a password and login as described above.

SETTING A STATIC IP ADDRESS

Select **Configuration>Networking** to display theNetworking screen:



Configuration>Networking

If you expect to have more than one Archer system on your network, it is recommended that you change the NetBIOS/Hostname to avoid conflicts with other units.

It is recommended that you uncheck the *Use DHCP* box and assign a static IP address for the unit (as assigned by your network administrator) in the *IP Address* box. Click *Save*.

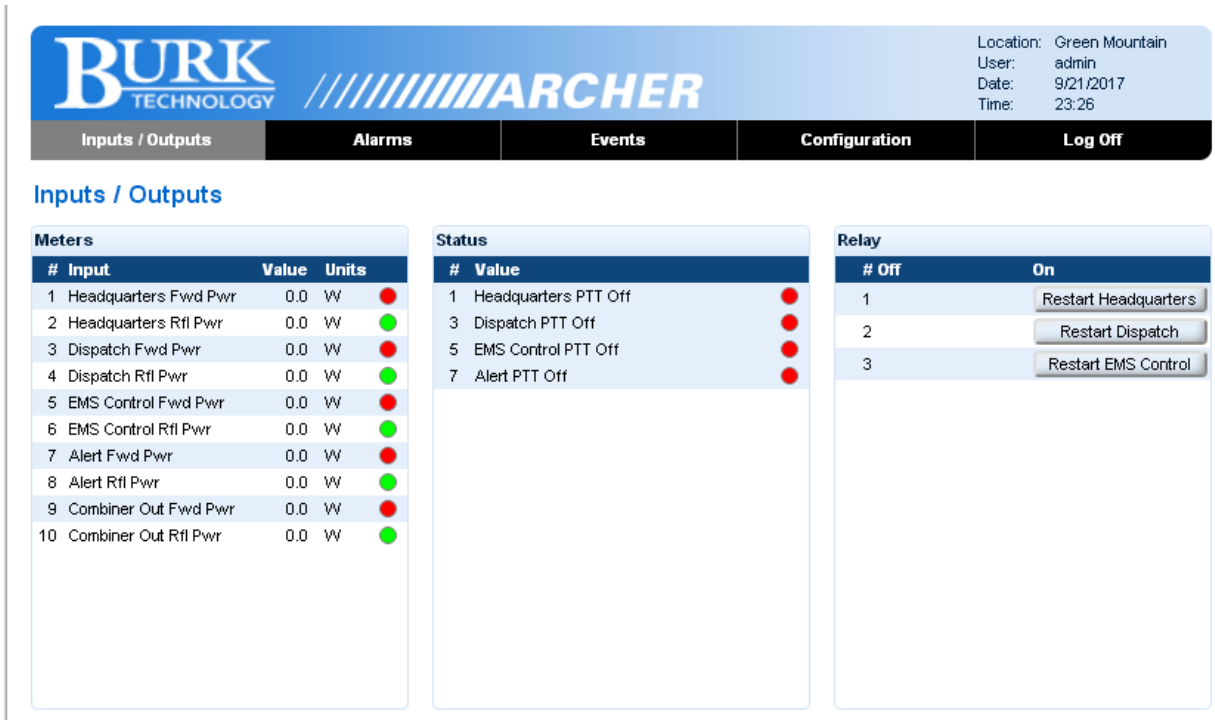
If your initial connection was made without DHCP, your PC should now be restored to its prior network settings, and both the PC and the Archer should be connected to the normal LAN.

COMPLETING THE ARCHER CONFIGURATION

Your browser will be redirected to the new static IP address and the login page will be displayed. You may now log in and complete the Archer system setup.

OPERATION

The most straight-forward method of operation is via a web browser. AutoPilot for Archer also provides access to Archer and is especially useful if the operation contains multiple sites with Archer remote controls. This section contains instructions for using the built-in web page. The *AutoPilot for Archer* manual includes operating instructions if that method is being used.



REQUIREMENTS

The Archer web page is designed to work on a PC or tablet such as an iPad. The web page does not require Java.

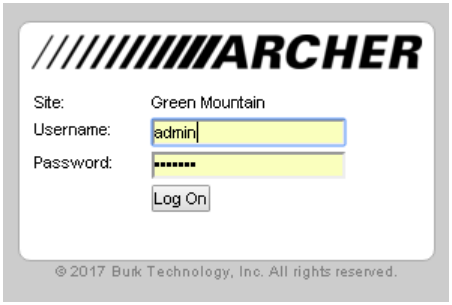
SECURITY

Archer uses HTTP authentication.

NAVIGATING THE WEB PAGE

LOGGING IN AND OUT

Enter the hostname or the IP address of the Archer unit in your web browser (ex. http://ARCHER) to log in. Refer to **NETWORK CONFIGURATION** if you are logging in for the first time. For subsequent logins, enter the user name and password and then click **Log On**.

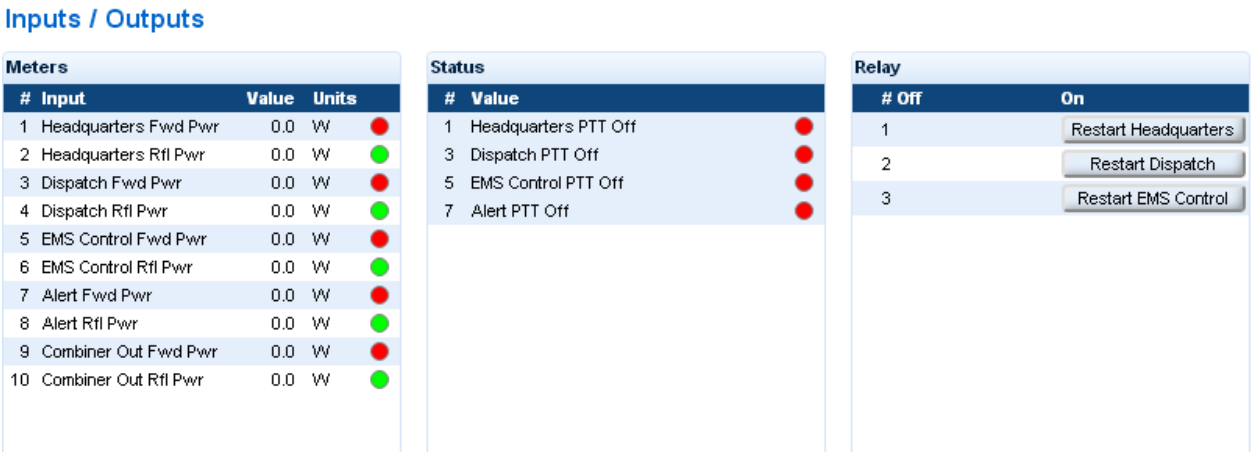


Use the **Log Off** link to end your session.

INPUTS / OUTPUTS

When you first log on, the web interface will display the Inputs / Outputs page. This page displays your meter and status inputs and your relay outputs. Only unhidden inputs and outputs will appear in the lists.

A muted alarm icon will appear to the right of the meter or status number if the alarm is muted. Mutes are active for 4 hours. Mutes can be disabled immediately by clicking on the Configuration tab, then clicking either **Meter Alarms** or **Status Alarms** in the sidebar menu, and finally by unchecking the mute checkbox on the **Meter Alarms** or **Status Alarms** page. Relay Off/On status appears in the Relay column. See **RELAYS** for more information.



User names, passwords and privileges are set up in System tab. If none have been established, the default user name is admin and the default password is password.

ALARMS

The Alarms page displays the alarms on this Archer with the following fields:

Date/Time	The date/time when the alarm occurred.
Duration	The duration of the alarm, if it has been resolved.
Severity	The severity (warning or critical) of the alarm.
Type	The type of alarm (such as a status alarm or system alarm).
Message	A message describing the alarm.
Time Cleared	The time the alarm was cleared, or blank if not cleared.

Alarms Clear all alarms

Date/Time	Duration	Severity	Type	Message	Time Cleared	
10/06/2017 04:16:44	0:00:02	Low Critical	Meter	Headquarters Fwd Pwr 26.4 W		Clear
10/06/2017 04:16:32	0:00:02	Low Critical	Meter	Headquarters Fwd Pwr 26.4 W		Clear
10/06/2017 04:16:22	0:00:01	Low Critical	Meter	Headquarters Fwd Pwr 42.2 W		Clear
10/06/2017 04:16:14	0:00:02	Low Warning	Meter	Headquarters Fwd Pwr 56.9 W		Clear
10/06/2017 04:16:01	0:00:02	Low Warning	Meter	Headquarters Fwd Pwr 64.1 W		Clear
10/06/2017 04:15:56	0:00:02	Low Warning	Meter	Headquarters Fwd Pwr 64.1 W		Clear

All alarms shown.

Alarms Tab

Use the **Clear** link to clear an alarm, or **Clear all alarms** to clear all. Use the **Show more** or **Show all** links at the bottom of the page to display more alarms. When all alarms are displayed, “All alarms shown” will appear at the bottom of the page.

EVENTS

The Events page displays the Archer event list. Events are activities concerning Archer itself, as opposed to reports from the equipment under control.

Events

Date/Time	Message
09/22/2017 00:15:47	Power on.
09/22/2017 00:15:30	Power on.
09/22/2017 00:13:46	Power on.
09/22/2017 00:13:30	Power on.
09/22/2017 00:10:49	Power on.
09/22/2017 00:09:50	Power on.
09/21/2017 00:52:59	Power on.
09/18/2017 04:52:43	Failed logon attempt: admin
09/18/2017 04:52:43	Failed user logon attempt: admin
09/18/2017 04:52:43	Failed logon attempt: admin
09/18/2017 04:52:43	Failed user logon attempt: admin
09/14/2017 00:58:15	Power on.
05/17/2006 23:54:14	Power on.
05/16/2006 00:58:31	Power on.
05/15/2006 20:47:37	Power on.
05/15/2006 20:47:18	Power on.
05/15/2006 20:42:03	Power on.
05/15/2006 20:41:05	Power on.
05/15/2006 20:40:48	Power on.
05/15/2006 20:40:30	Power on.
05/15/2006 20:35:43	Power on.
05/15/2006 18:09:36	Power on.
05/15/2006 17:47:09	Power on.
05/15/2006 02:44:46	Power on.
05/15/2006 02:24:47	Power on.

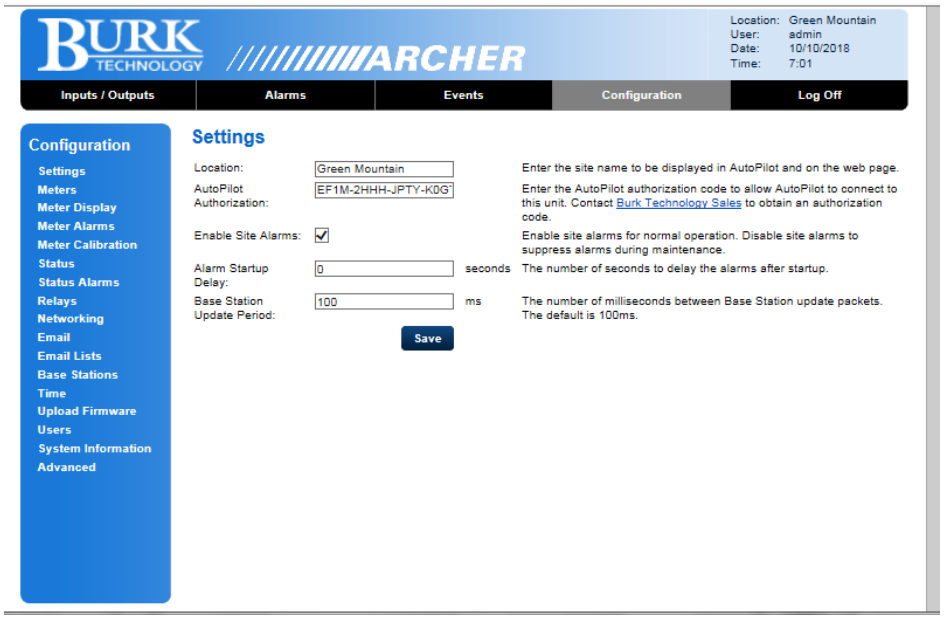
Show more
Show all

Events Tab

Use the **Show more** or **Show all** links at the bottom of the page to display more events. When all events are displayed, “All events shown” will appear at the bottom of the page.

CONFIGURATION

The Configuration page allows you to perform system-related actions. This page is only available if an administrator is logged on. When you first select the Configuration tab, the Settings page appears with the Configuration sidebar. The Configuration sidebar can be used to access other system parameters.

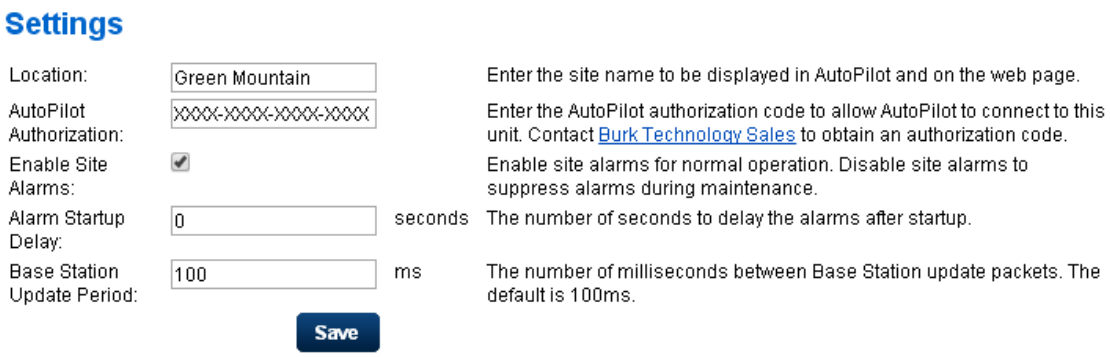


Configuration Tab

SETTINGS

Configure general settings for the site.

Location	Enter the site name to be displayed in AutoPilot for Archer and on the web page.
AutoPilot Authorization	Enter the AutoPilot authorization code to allow AutoPilot for Archer to connect to this unit. Contact Sales (Sales) to obtain an authorization code.
Enable Site Alarms	Enable site alarms for normal operation. Disable site alarms to suppress alarms during maintenance.
Alarm Startup Delay	The number of seconds to delay the alarms after startup.
Base Station Update Period	This is the number of milliseconds between Base Station update packets. The default is 100ms.



Configuration>Settings

METERS

Configure each meter channel as described here.

Meters

Save

Meter	Hide	Label	Units	Decimal	Low Critical	Low Warning	High Warning	High Critical	Base Station
1		Headquarters	W	000.0	50	70	10000	10000	Fwd Power on Headquarters
2		Headquarters	W	000.0	-10000	-10000	10	20	Ref Power on Headquarters
3		Dispatch Fwd	W	000.0	50	70	10000	10000	Fwd Power on Dispatch
4		Dispatch Rfl P	W	000.0	-10000	-10000	10	20	Ref Power on Dispatch
5		EMS Control F	W	000.0	50	70	10000	10000	Fwd Power on EMS Control
6		EMS Control F	W	000.0	-10000	-10000	10	20	Ref Power on EMS Control
7		Alert Fwd Pwr	W	000.0	50	70	10000	10000	Fwd Power on Alert
8		Alert Rfl Pwr	W	000.0	-10000	-10000	10	20	Ref Power on Alert
9		Combiner Out	W	000.0	50	70	10000	10000	Fwd Power on Combiner Out
10		Combiner Out	W	000.0	-10000	-10000	20	40	Ref Power on Combiner Out
11		Rack Temp	Deg F	000.0	-10000	-10000	10000	10000	
12		AC Voltage	V	000.0	-10000	-10000	10000	10000	
13		Meter 13	mV	0000.	-10000	-10000	10000	10000	
14		Meter 14	mV	0000.	-10000	-10000	10000	10000	
15		Meter 15	mV	0000.	-10000	-10000	10000	10000	
16		Meter 16	mV	0000.	-10000	-10000	10000	10000	

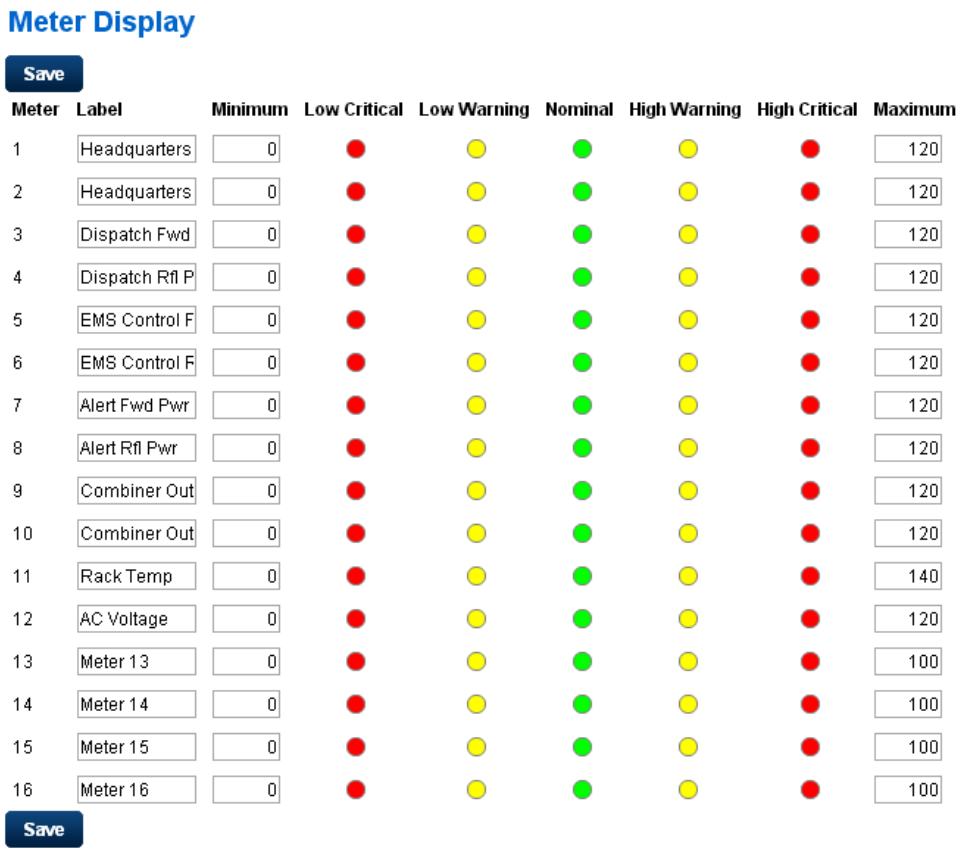
Save

Configuration>Meters

Meter	Number of the meter input on rear panel.
Hide	Hides the meter on the Inputs /Outputs web page.
Label	Enter the name of the meter.
Units	Enter a unit label such as **mV.**
Decimal	Use the Decimal column to select the location of the decimal place when Archer reports the input reading.
Low Critical	If the meter drops below the value entered, a **Critical** alarm will be set.
Low Warning	If the meter is less than this value and more than the Low Critical value, a **Warning** alarm will be set.
High Warning	If the meter is greater than this value and less than the High Critical value, a **Warning** alarm will be set.
High Critical	If the meter rises above this value, a **Critical** alarm will be set.
Base Station	Identifies the base station to which this meter channel has been assigned.

METER DISPLAY

The Minimum and **Maximum values** set the range limits on AutoPilot for Archer meters. These limits have no effect on the web page meters display, but can be imported by AutoPilot for Archer to automatically set meter display ranges



Meter Display

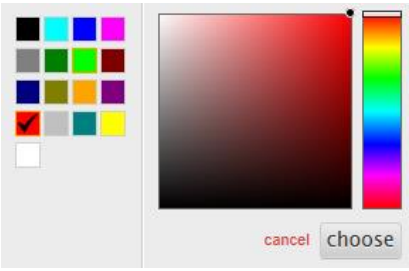
Save

Meter	Label	Minimum	Low Critical	Low Warning	Nominal	High Warning	High Critical	Maximum
1	Headquarters	0						120
2	Headquarters	0						120
3	Dispatch Fwd	0						120
4	Dispatch Rfl P	0						120
5	EMS Control F	0						120
6	EMS Control F	0						120
7	Alert Fwd Pwr	0						120
8	Alert Rfl Pwr	0						120
9	Combiner Out	0						120
10	Combiner Out	0						120
11	Rack Temp	0						140
12	AC Voltage	0						120
13	Meter 13	0						100
14	Meter 14	0						100
15	Meter 15	0						100
16	Meter 16	0						100

Save

Configuration>Meter Display

Each meter can display up to five color zones, allowing you to depict a **Low Critical** up to a **High Critical** tolerance range on the AutoPilot for Archer meters and simulated LEDs on the Inputs / Outputs web page. To set the color, click on the colored dots under the meter headings to display the color selection tool.



METER ALARMS

Configure the meter alarms.

Meter Alarms

Save

Meter	Muted	Label	Alarm Enable	Hysteresis	Alarm Delay (sec)	Rearm Delay (sec)	Email List
1	☐	Headquarters	☐	0	0.5	3600	None
2	☐	Headquarters	☐	0	0.5	3600	None
3	☐	Dispatch Fwd	☐	0	0.5	3600	None
4	☐	Dispatch Rfl P	☐	0	0.5	3600	None
5	☐	EMS Control F	☐	0	0.5	3600	None
6	☐	EMS Control F	☐	0	0.5	3600	None
7	☐	Alert Fwd Pwr	☐	0	0.5	3600	None
8	☐	Alert Rfl Pwr	☐	0	0.5	3600	None
9	☐	Combiner Out	☐	0	0.5	3600	None
10	☐	Combiner Out	☐	0	0.5	3600	None
11	☐	Rack Temp	☐	0	0	0	None
12	☐	AC Voltage	☐	0	0	0	None
13	☐	Meter 13	☐	0	0	0	None
14	☐	Meter 14	☐	0	0	0	None
15	☐	Meter 15	☐	0	0	0	None
16	☐	Meter 16	☐	0	0	0	None

Save

Configuration>Meter Alarms

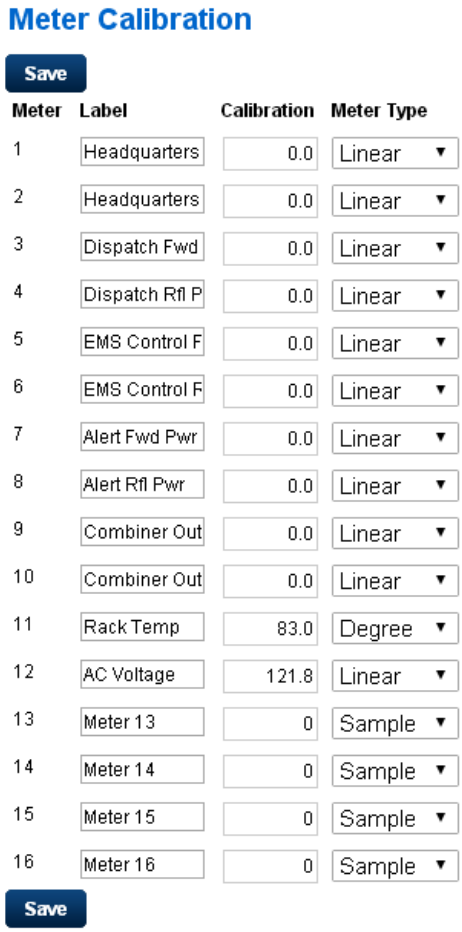
Muted	A check in this box mutes the alarm for 4 hours.
Label	Enter the name to be displayed
Alarm Enable	Use the checkbox to turn on alarms
Hysteresis	The number of seconds to delay the alarms after startup. The hysteresis value prevents small variations in the meter value from triggering multiple alarms. An alarm is logged the first time the meter value crosses the alarm threshold. Before the alarm can be generated again, the value must fall below the alarm threshold by an amount equal to the hysteresis value. The hysteresis value is specified in the units assigned to the channel, for example Watts.
Alarm Delay	This is the length of time in seconds that the value must be in the alarm condition before the alarm is logged.
Rearm Delay	Archer has a built-in mechanism to reduce repetitive alarm reports for a single alarm. An out-of-tolerance metering input that returns to tolerance must remain within normal limits for a period of time before a new alarm is issued on that input. Use the Rearm Delay to specify this period. For example, a faulty base station with output power lower than the programmed alarm threshold will trigger a new alarm each time the transmitter is keyed on. Use the Rearm Delay to specify the amount of time in seconds that must elapse before the alarm is reported again.
Email List	Use the drop down menu to select a target email list. If an alarm is triggered, the personnel will be notified via email.

Note that an alarm will be set only if the condition is still present after the **Alarm Delay**.

METER CALIBRATION

Configure the meter channel Calibration value.

Before calibrating a meter channel, select the meter type from the drop-down box. Note that channels set to "Sample" or "Degree" cannot be calibrated.



Meter Calibration

Save

Meter	Label	Calibration	Meter Type
1	Headquarters	0.0	Linear
2	Headquarters	0.0	Linear
3	Dispatch Fwd	0.0	Linear
4	Dispatch Rfl P	0.0	Linear
5	EMS Control F	0.0	Linear
6	EMS Control F	0.0	Linear
7	Alert Fwd Pwr	0.0	Linear
8	Alert Rfl Pwr	0.0	Linear
9	Combiner Out	0.0	Linear
10	Combiner Out	0.0	Linear
11	Rack Temp	83.0	Degree
12	AC Voltage	121.8	Linear
13	Meter 13	0	Sample
14	Meter 14	0	Sample
15	Meter 15	0	Sample
16	Meter 16	0	Sample

Save

Configuration>Meter Calibration

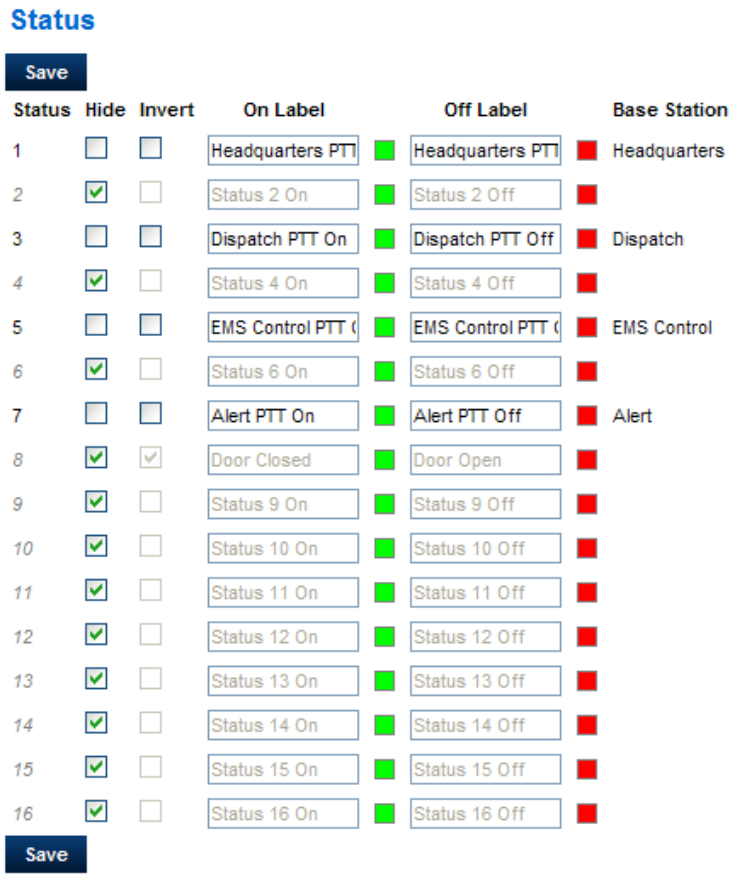
These are the selections for the "Meter Type."

Sample	The applied input voltage (cannot calibrate)
Linear	Normal
Power	Squares the input
Degree	Temperature (cannot calibrate)

To calibrate a channel, apply a voltage to that channel's meter input on the rear panel of the unit. Click the Calibration value for the meter channel to be calibrated. A Calibrate Meter dialog box will be displayed showing the current value of the meter display. In the New Meter Value field, enter the value that should be displayed to represent the currently applied voltage and click **Calibrate**.

STATUS

Configure the Status inputs.

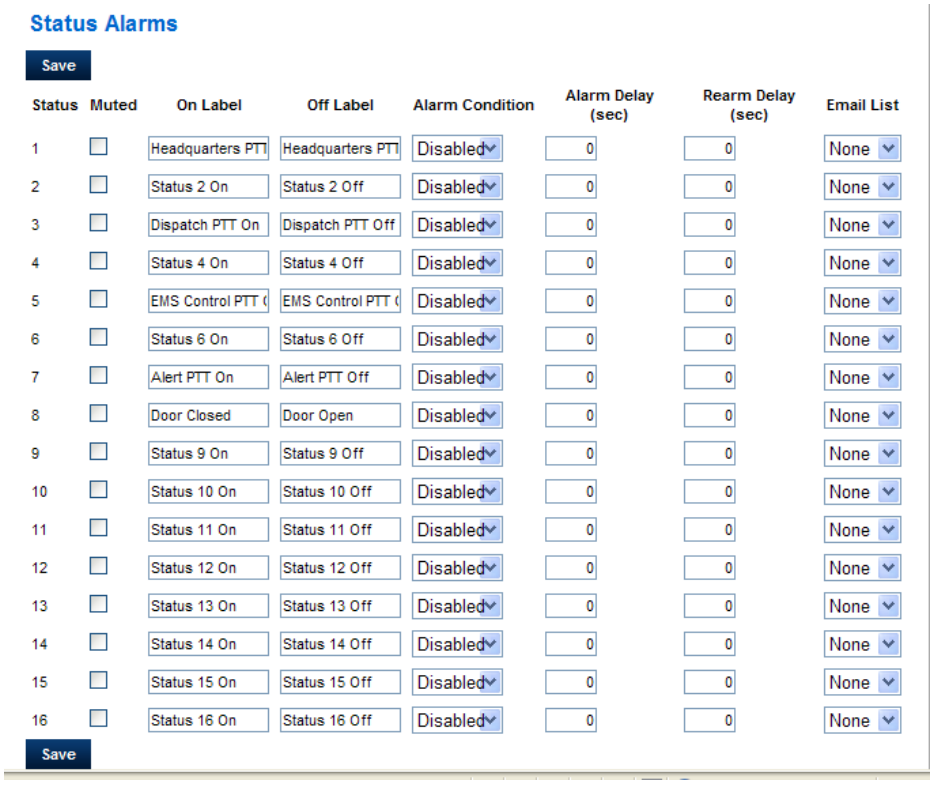


Configuration>Status

Hide	Check the box to hide channel.
Invert	Check the box to reverse the sense of the input.
On Label	Enter a label to display for the ON condition of this status channel.
Off Label	Enter a label to display for the OFF condition of this status channel.
Base Station	The Base Station to which the Status input is assigned.

STATUS ALARMS

Configure the Status Alarm inputs.



Status Alarms

Save

Status	Muted	On Label	Off Label	Alarm Condition	Alarm Delay (sec)	Rearm Delay (sec)	Email List
1	☐	Headquarters PTT	Headquarters PTT	Disabled	0	0	None
2	☐	Status 2 On	Status 2 Off	Disabled	0	0	None
3	☐	Dispatch PTT On	Dispatch PTT Off	Disabled	0	0	None
4	☐	Status 4 On	Status 4 Off	Disabled	0	0	None
5	☐	EMS Control PTT (	EMS Control PTT (	Disabled	0	0	None
6	☐	Status 6 On	Status 6 Off	Disabled	0	0	None
7	☐	Alert PTT On	Alert PTT Off	Disabled	0	0	None
8	☐	Door Closed	Door Open	Disabled	0	0	None
9	☐	Status 9 On	Status 9 Off	Disabled	0	0	None
10	☐	Status 10 On	Status 10 Off	Disabled	0	0	None
11	☐	Status 11 On	Status 11 Off	Disabled	0	0	None
12	☐	Status 12 On	Status 12 Off	Disabled	0	0	None
13	☐	Status 13 On	Status 13 Off	Disabled	0	0	None
14	☐	Status 14 On	Status 14 Off	Disabled	0	0	None
15	☐	Status 15 On	Status 15 Off	Disabled	0	0	None
16	☐	Status 16 On	Status 16 Off	Disabled	0	0	None

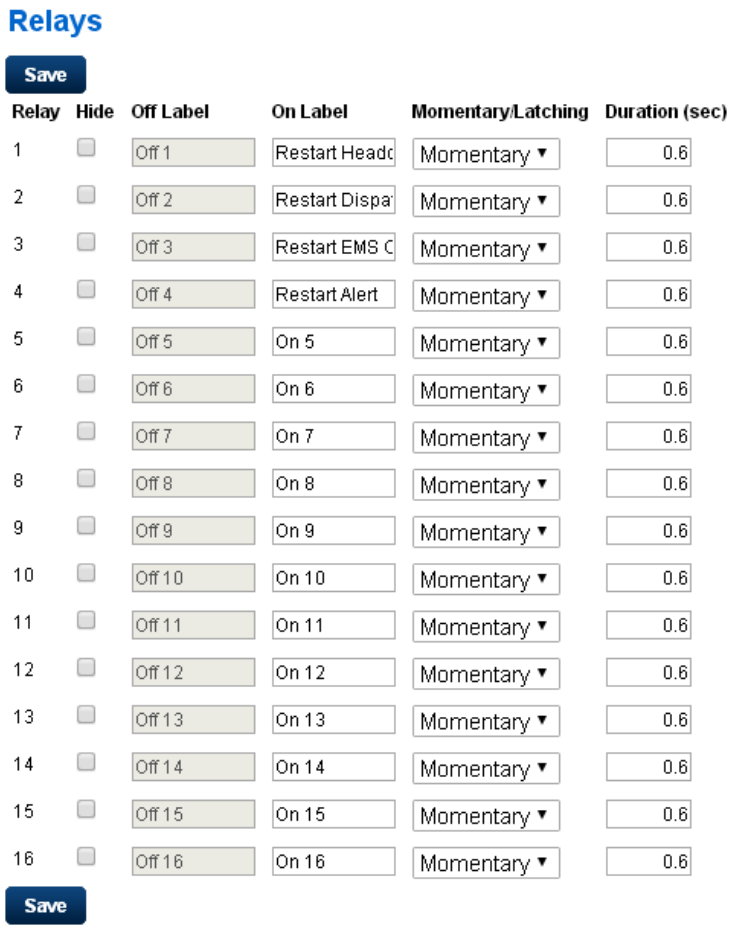
Save

Configuration>Status Alarms

Muted	Check the box to mute the alarm for 4 hours.
On Label	Enter a label to display for the ON condition of this status channel.
Off Label	Enter a label to display for the OFF condition of this status channel.
Alarm Condition	Sets the condition to trigger the alarm. Conditions include "**disabled**", "**when off**", "**when on**", and "**on change**".
Alarm Delay	Set the length of time in seconds the alarm is delayed.
Rearm Delay	Archer has a built-in mechanism to reduce repetitive alarm reports for a single alarm. An alarm input that returns to normal must remain normal for a period of time before a new alarm is issued on that input. Use the Rearm Delay to specify this period.
Email List	Use the drop down menu to select a target email list. If an alarm is triggered, addresses on the selected list will receive an email notification.

RELAYS

Configure the relay outputs.

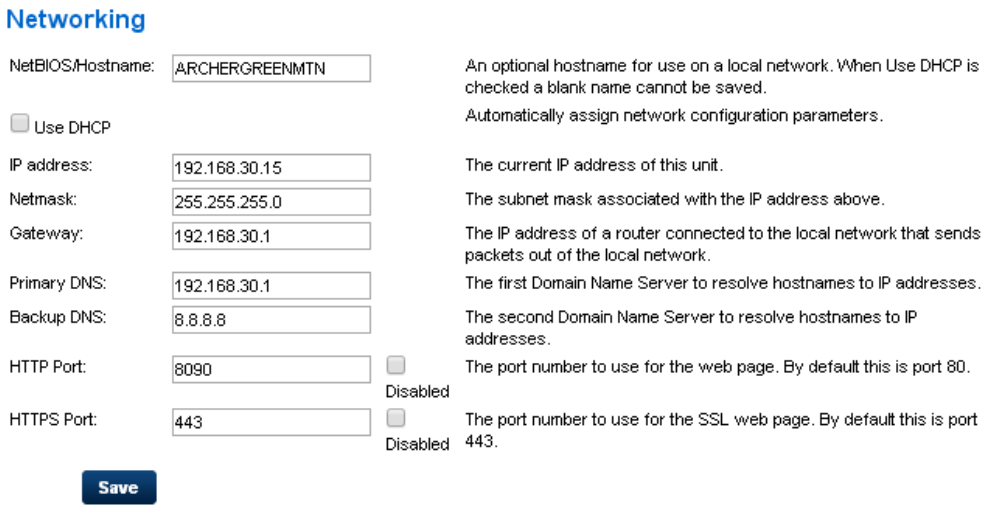


Configuration>Relays

Hide	Check the box to hide relay buttons for this channel.
Off Label	Enter a label for the button that turns off a relay configured for Latching operation
On Label	Enter a label for the button that turns on a relay configured for Latching operation, or that pulses a relay configured for momentary operation.
Momentary/Latching	Momentary relays will turn on for the duration when the on button is pressed. Latching relays will turn on with the on button and stay on until the off button is pressed.
Duration	Set the length of time the relay is active for a momentary command. The minimum allowed setting is 100 ms, to ensure reliable relay actuation.

NETWORKING

Use the Networking page to set the networking parameters on Archer.

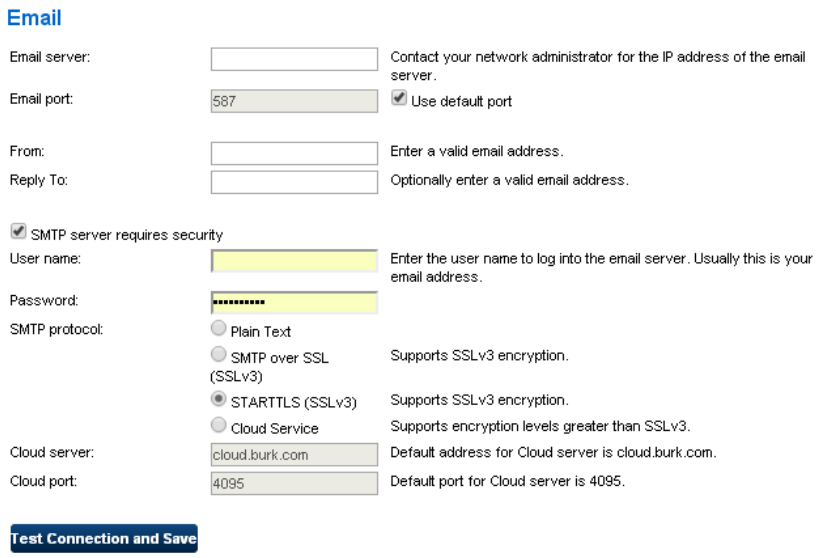


Configuration>Networking

NetBIOS / Hostname	The hostname used on a local network when DHCP is enabled. The default hostname is ARCHER. If multiple Archer units are on the same network, make sure that each unit is assigned a unique hostname. A blank hostname cannot be saved if the **Use DHCP** box is checked. Hostnames may include only letters, numbers and hyphens
Use DHCP	Automatically assign network configuration parameters. DHCP is enabled when the unit is shipped from the factory, and is re-enabled any time a FACTORY DEFAULT action is initiated or the MASTER INIT button on the rear panel is depressed.
IP address	The current IP address of this unit.
Netmask	The subnet mask associated with the IP address above.
Gateway	The IP address of the router connected to the local network that sends packets out of the local network.
Primary DNS	The first Domain Name Server to resolve hostnames to IP addresses.
Backup DNS	The second Domain Name Server to resolve hostnames to IP addresses.
HTTP Port	The port number to use for the web page. By default this is port 80.
HTTPS Port	The port number to use for the SSL web page. By default this is port 443.

EMAIL

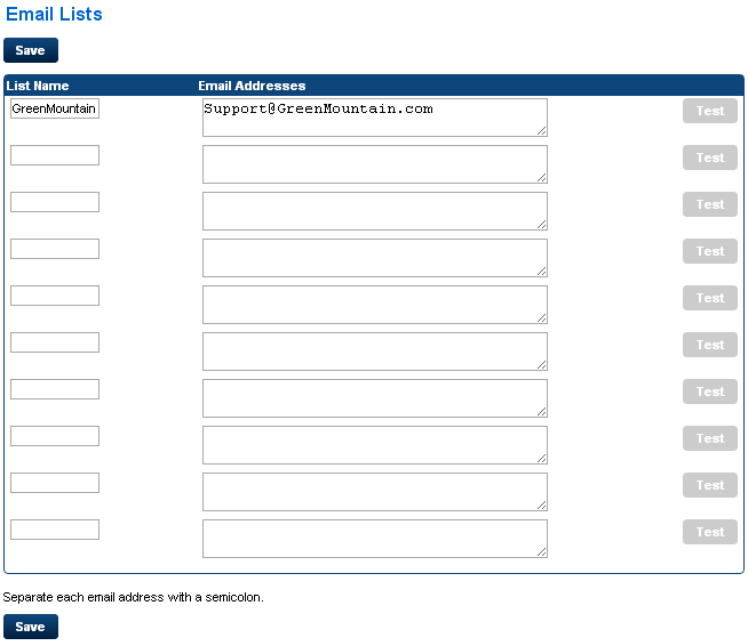
Set up the Email server and configure the SMTP settings for your Archer. For support of encryption levels higher than SSLv3, Archer supports the Burk Email Cloud Service. The Cloud Service works in conjunction with your Archer to originate encrypted emails using the STARTTLS protocol extension. If your current email server does not support STARTTLS, you can open a free email account with an Internet email service provider. The Burk Email Cloud Service is compatible with email services from a wide range of providers such as Gmail, mail.com, GMX and Zoho. It is suggested that you create an email account dedicated for use with your Archer systems. This will make it easier to identify and sort email received from Archer systems and to monitor email activity. To configure Archer for use with the cloud service, select **Cloud Service STARTTLS** as indicated below.



Configuration>Email

Email server	Email server IP address. Obtain from your network administrator. If using the Burk Email Cloud Service, enter an SMTP server such as smtp.gmail.com.
Email port	The port number to use for the email server. By default this is port 587.
From	Emails originating from Archer must have a From address.
Reply To	Any undeliverable notifications will be sent to the Reply To address.
SMTP server requires security	Check this box if your email server requires authentication or if you are using the Burk Email Cloud Service.
User name/Password	Enter the username to log into the email server. The user name is typically your email address.
SMTP protocol	Choose plain text, SMTP over SSL or STARTTLS email format, or select Cloud Service.
Cloud server	Accept the default Cloud Server, cloud.burk.com.
Cloud port	Accept the default Cloud Port, 4095.

EMAIL LISTS



Configuration>Email Lists

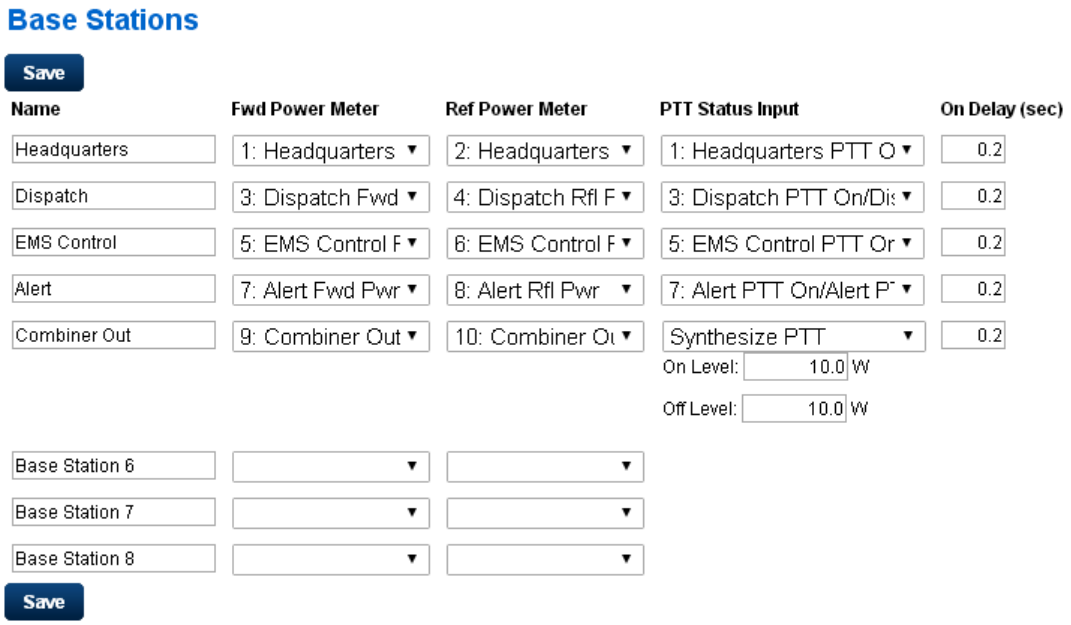
Manage email lists and addresses.

List Name	Enter a title to be displayed for each email list.
Email Addresses	Enter one or more email addresses. Separate each email address with a semicolon (;).
Test	Test each list to confirm it works properly.

BASE STATIONS

A base station associates a PTT (Push to Talk) Status Input from the mobile radio transmitter with a forward power meter, a reflected power meter, or both.

In cases where no PTT status input is available, use Archer's Synthesize PTT feature to derive a synthesized PTT input. Synthesis allows Archer to use On Level and Off Level settings to control monitoring of the forward and reflected power meter inputs. When the forward power level exceeds the specified On Level, monitoring begins and continues until the level goes below the specified Off Level.



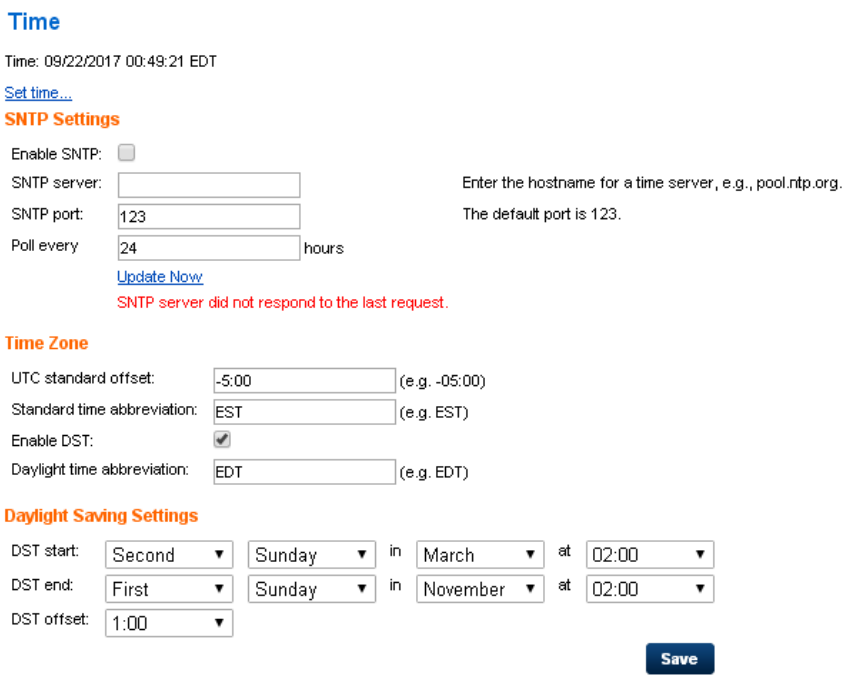
Configuration>Base Stations

Name	Base Station name.
Fwd Power Meter	Select one of the meter inputs as the Forward Power Meter to monitor for this base station.
Ref Power Meter	Select one of the meter inputs as the Reflected Power Meter to monitor for this base station.
PTT Status Input	Select a status input to use as a PTT signal for this base station. If none is available, select **Synthesize PTT**.
On Level	If Synthesize PTT is selected, specify the forward power threshold level at which to begin logging Forward and Reflected power.
Off Level	If Synthesize PTT is selected, specify the forward power threshold level at which to stop logging Forward and Reflected power.
On Delay	The PTT input signal must be true for this amount of time before Forward and Reflected Power measurements are logged.

TIME

Set the time and configure SNTP and time zone settings.

Configuration>Time

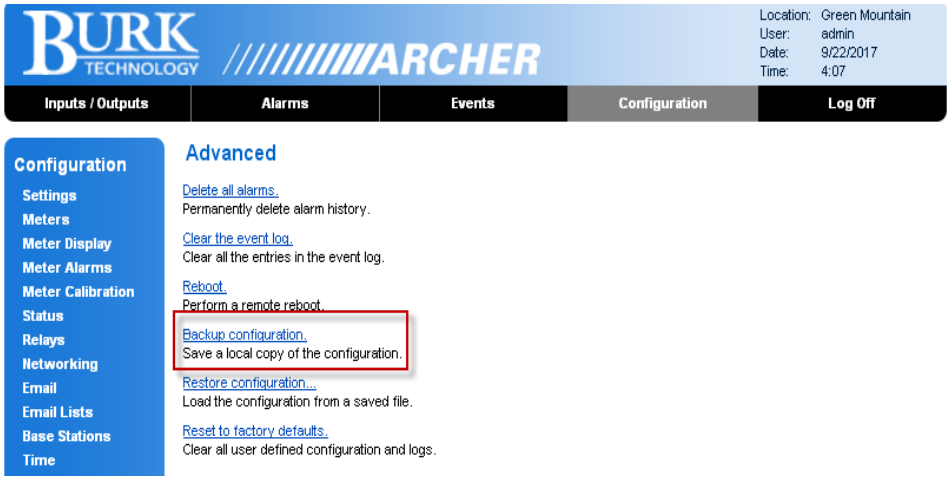


Program the SNTP settings, time zone and daylight saving time settings.

Note: Using an SNTP server is recommended to ensure accurate timestamps and scheduled operations.

UPLOAD FIRMWARE

Before updating Archer firmware, back up your current configuration.



1. Open a browser, enter the IP address of the Archer and log into the web page with the admin account.
2. Click **Configuration>Advanced>Backup configuration.**
3. Save the file, MasterCfg.json, in a convenient location on your computer.

DOWNLOAD AND INSTALL THE BURK FIRMWARE LOADER (IF NOT ALREADY INSTALLED)

1. If the Burk Firmware Loader is already installed on your computer, proceed to DOWNLOAD THE ARCHER FIRMWARE."

NOTE: By default, only members of the Administrators group on a computer can install new software. If you do not have the rights to complete all steps of this process, please contact your system administrator.

2. Go to www.burk.com/downloads and select the Burk Firmware Loader support page.
3. Download and install the Burk Firmware Loader.

DOWNLOAD THE ARCHER FIRMWARE

1. Go to www.burk.com/downloads and select the Archer support page.
2. Download and save the Archer firmware folder.

ALLOW BURK FIRMWARE LOADER THROUGH WINDOWS FIREWALL

1. Click Start >Control Panel and select **Windows Firewall**.
2. Select **Allow a Program or feature through Windows firewall.**
3. Select **Allow another program.**

NOTE: If the **Allow another program** button is un-selectable, click the **Change Settings** button first to unlock it.

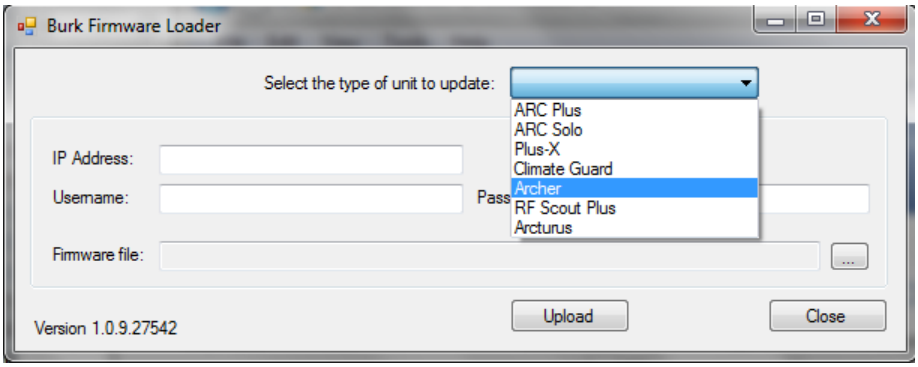
4. Click **browse** and search for the file C:\Program Files(x86)\Burk Technology\Burk Firmware Loader.
5. Select **Burk Firmware Loader** and click **Open** and click **Add.**

ENABLE UPLOAD ON ARCHER

1. Open a browser, enter the IP address of the Archer and log into the web page with the admin account.
2. Click **Configuration>Upload Firmware** and click the **Enable Upload** button.

RUN THE BURK FIRMWARE LOADER

1. Click Start >**All Programs**>**Burk Technology**>**Burk Firmware Loader** and launch the program. The window below will open.
2. Select Archer from the menu.
3. Enter the IP Address of the Archer, the Username and the Password. Select the Archer firmware folder that you previously saved and click **Upload**.
4. A notification window will open when the upload is complete. Click **OK.**



NOTE: The Archer folder is a compressed (zipped) folder. You **do not** need to un-compress (un-zip) this folder before using it with the Burk Firmware Loader.

VERIFY FIRMWARE VERSION AND CONFIGURATION SETTINGS

Note: If Archer detects corruption in the on-board configuration data during the firmware update process, it will restore affected settings to factory default values. This may include network configuration settings.

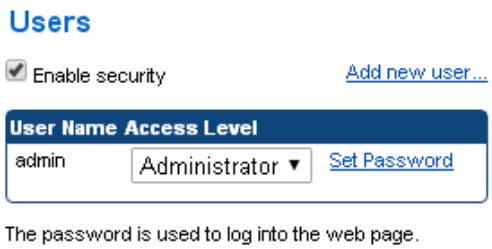
1. Open a browser and address the Archer using its previously configured IP address or hostname.
2. If the system does not respond, repeat the access using the default hostname **ARCHER**. You will be asked to assign a password for the administrator account.
3. Restore system configurations by selecting **Configuration>Advanced>Restore configuration**.
4. Check **Restore network settings** and **Restore user settings.**
5. Browse to and select the MasterCfg.json file saved at the beginning of this procedure.
6. Click **Restore**. The message "Uploading configuration data. This may take some time…" will be displayed.
7. When the Restore successful dialog is displayed, click **OK**.
8. Confirm that you can access the web page using the original network settings.
9. Select **Configuration>System Information** to confirm that the correct firmware revision is in place.

USERS

Manage user accounts and passwords.

The following user access levels are available.

Administrator	Allows commands and access to all setup and configuration
Operator	Allows commands but not setup
Observer	Allows read only access to the site

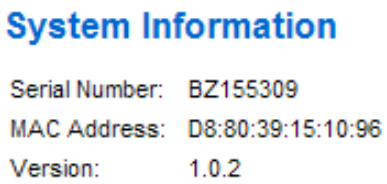


Configuration>Users

SYSTEM INFORMATION

View the following system information.

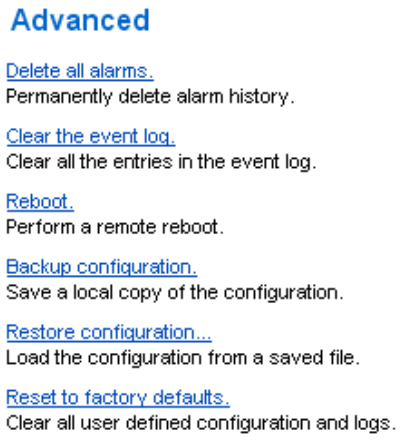
Serial Number	Unit serial number
MAC Address	Media access control unique identifier
Version	Software firmware version



Configuration>System Information

ADVANCED

Manage alarms, events, and configuration; reboot system.



Configuration>Advanced

Delete all alarms	Permanently deletes all the alarms.
Clear the event log	Clear all the entries in the event log.
Reboot	Perform a remote soft reboot.
Backup configuration	Save a local copy of the configuration.
Restore configuration	Restore the configuration from a saved file.
Reset to factory defaults	Perform a factory default to clear all the settings and logs. The operation cannot be undone.

RESETTING TO FACTORY DEFAULTS

The **Reset to Factory Defaults** link will reset the Archer to its factory default settings. The page will show a confirmation.

A reset back to the default domain name occurs when you perform this action: http://192.168.0.100/.

WARNING: Resetting Archer to factory defaults will erase all of your configuration and data from the unit. This operation cannot be undone.It is strongly recommended that you create a back-up first.

REBOOTING

The **Reboot** link will reboot Archer. You will see a confirmation prompt before the system reboots.

SMARTPHONE WEB PAGE

The Archer smartphone-optimized web page is designed to work with iPhone, Android and other popular smartphones.

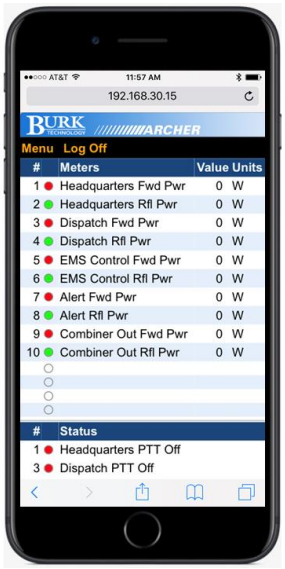
To access the smartphone interface, add **/mobile/** to the URL for your Archer. For example, if your Archer's hostname is ARCHER, navigate to:

```
http://ARCHER/mobile/
```

Be sure to include the trailing "/".

The unit's assigned IP address can be used in place of the hostname.

The smartphone interface is designed for use on a smartphone or other small format mobile device. While it is possible to view this page on a desktop, laptop or tablet, the page may not display as expected. However, the standard web interface will work correctly on these devices.



Smartphone webpage on the iPhone

SECURITY

The mobile web page uses the same security as the standard web page.

NAVIGATING

When you log on to the smartphone interface you will see the **Inputs / Outputs** page. This page displays your meter and status inputs and relay outputs in a vertical list. If you have more inputs and outputs than fit on one screen, scroll down to see more.

Use the Menu link to display the additional features available in the smartphone interface:

Inputs / Outputs	Displays meter, status and command channels. This is the starting page.
Alarms	Displays all alarms on this Archer. Alarms are displayed in a vertical list, with each field on its own line.
Events	Displays the event list.
Log Off	Logs off the smartphone interface.

APPENDIX A: SPECIFICATIONS

Operating Temperature	0º to 40ºC
Humidity	5 to 85% RH
Power Requirements	100 to 240VAC, 47–63Hz, 1A; Power entry module with standard, grounded power cord supplied; 1A fuse protection
Dimensions (WxHxD)	19” x 3.5” x 12” (48.26cm x 8.89cm x 30.48cm)
Inputs and Outputs	16 status inputs, 16 metering inputs, 16 relay outputs
Metering Input Range	-10 to +10VDC > 99.75% accuracy, full scale
Relay Contacts	Form C; momentary or latching; max 5A, 240VAC
Front Panel Indicators	Red/Green LEDs for alarm, remote, power indicator by any lit LED
Front Panel Control	Remote (maintenance lockout)
Rear Panel Connections	Phoenix-Style: 16 Relay Contacts 16 Status Inputs 16 Meter Inputs RJ-45: Ethernet IEC: Power
User Interfaces	Web interface for PCs and tablets; Mobile web interface for smartphones; Optional AutoPilot for Archer customized graphical control, alarm management, data logging, report generation and PTT Flip-book analysis.
Email and SMS Alerts	User selectable per status input and meter input; 10 email lists of up to 20 email addresses each