

Installation and Operation Manual

SiteSync IQ

Wireless Remote Transmitter



FCC Conformity (USA only)

Responsible Party: American Time, 140 3rd St. S., PO Box 707, Dassel, MN 55325-0707 USA

TEL: 320-275-2101, declares that the product(s):

SiteSync IQ Remote Transmitter and Analog Clocks

Comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference
- (2) This device must accept any interference received, including interference that may cause undesired operation

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Call the dealer or an experienced radio/TV technician for help

FCC Licensing

The SiteSync IQ Remote Transmitter is furnished with a wireless transmitter. In the USA, these Radio Frequency (RF) transmitters operate in the licensed UHF business band at 450 to 470 MHz. The SiteSync IQ Remote Transmitter needs to be licensed. For USA customers, American Time offers the use of a shared nationwide FCC license, call sign WQFW336. In the USA and its territories, this allows nationwide wireless system operation on the following 5 frequencies up to 100 watts of power, except near the Canadian border*:

464.600 MHz 464.625 MHz 464.650 MHz 464.675 MHz 464.700 MHz

If you wish to use an existing license in the 450-470 MHz band, or obtain a fixed license for your site, please contact American Time at 800-328-8996.

*This shared nationwide license is limited to 5 watts power North of Line A and East of Line C, as defined by a treaty with Canada. Please check the FCC label on the back of your remote transmitter to determine the 5W transmitter FCC ID.

FCC and Industry Canada Approvals

SiteSync IQ Equipment	Transmitter FCC ID	Industry Canada Transmitter ID	Industry Canada Receiver ID
Remote Transmitter 5 & 10W	AIERIT33-46009	1084A-RIT3346009	8306A-SSIQ
Remote Transmitter 30W	AIERIT34-4650	N/A	8306A-SSIQ
Remote Transmitter 40W	ABZ99FT4048	109AB-99FT4048	8306A-SSIQ
Secondary Wall Clocks	N/A	N/A	8306A-SSIQ

Changes or modifications not expressly approved by American Time could void the user's authority to operate the equipment.

Safety Precautions

All electrical power and signal wiring connected to the SiteSync IQ Remote Transmitter, secondary clocks, signaling devices and antennas must be installed by qualified persons in conformance with applicable national and local electrical codes. Improper installation of this equipment can result in lethal electrical shock and fire.

The SiteSync IQ Remote Transmitter should be installed in a secure location protected from:

- Physical damage
- Water, including condensation
- Direct sunlight
- Operation by untrained personnel

Injury From Radio Frequency Transmissions: Do not operate the SiteSync IQ Remote Transmitter when somebody is either touching the transmitting antenna or standing within 2-3 ft. (60-90 cm) of it, to avoid the possibility of radio frequency burns or related physical injury. Do not allow children to operate or play with or near the transmitting equipment.

Dynamite Blasting Caps: Operating the SiteSync IQ Remote Transmitter within 500 ft. (150 m) of dynamite blasting caps may cause them to explode. Turn OFF these units when in an area where blasting is in progress.

FCC Warning: This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

The above warning list is not intended to include all hazards that may be encountered when using this equipment.

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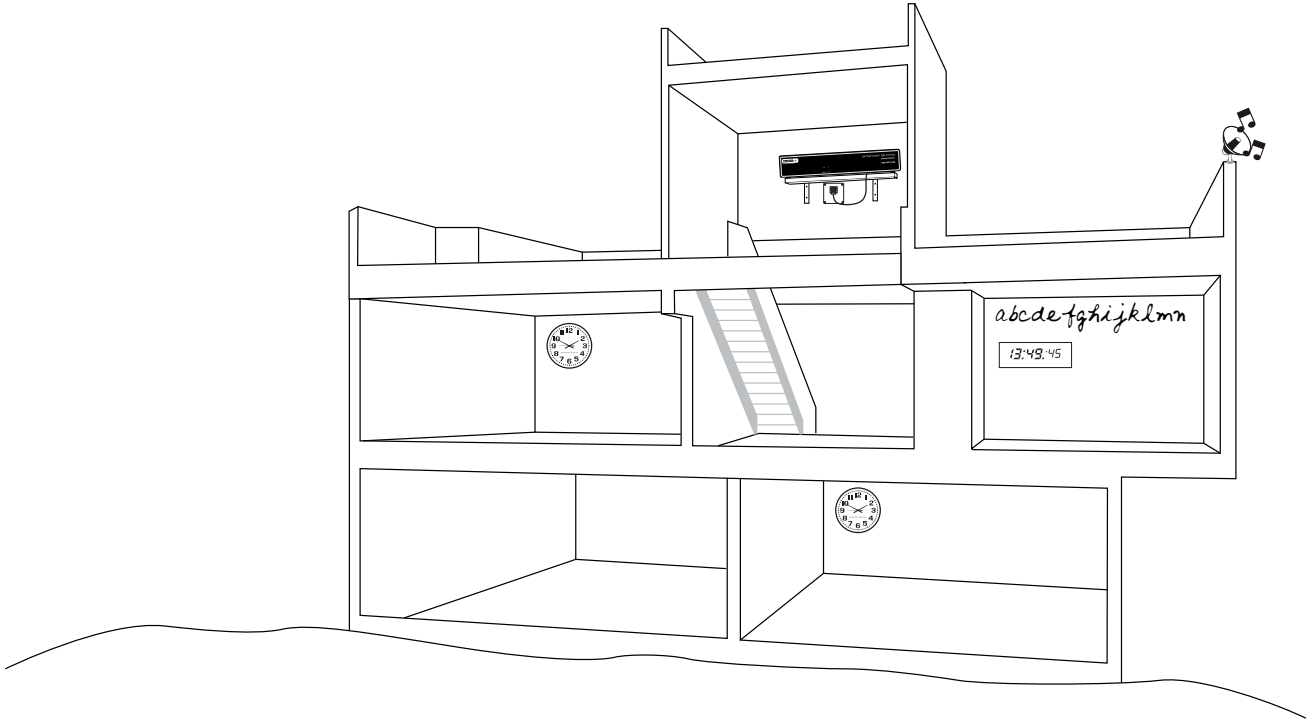
American Time

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PO Box 707
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Phone: **800-328-8996**

Fax: **800-789-1882**

american-time.com

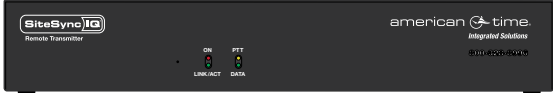


The American Time SiteSync IQ Remote Transmitter offers the latest and most innovative way to incorporate synchronized time throughout your facility, providing you with improved productivity and punctuality.

SiteSync IQ Remote Transmitter Standard Features

The SiteSync IQ Remote Transmitter provides synchronized control of system clocks and electrical circuits- such as those for controlling signaling devices and lights. Standard features include:

- Internal clock accuracy of ±1 minute per year (without synchronization)
- Two level password security
- Automatic Daylight Saving Time and Leap Year correction
- Programmable Custom and Automatic Daylight Saving Time
- Support for time zone clocks (up to eight unique time zones)
- Support for 5, 10, 30 and 40 watt internal transmitters

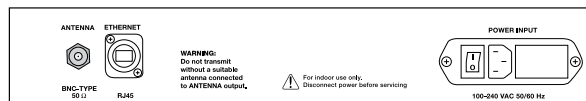


SiteSync IQ Wireless Remote Transmitter Specifications

Input Voltage:	100-240vac, 50/60 Hz	Physical Dimensions:	2.8"h x 16.625"w x 13.08"d
Peak Input Power:.....	41W-SSQRTM-05; 65W-SSQRTM-10	Temperature Range:	32°-140°F (0°-60°C)
	130W-SSQRTM-30; 160W-SSQRTM-40	Mounting:	Desktop or rack mount
Nominal Power:	21W-SSQRTM-05; 26W-SSQRTM-10	Communication:.....	Ethernet
	42W-SSQRTM-30; 45W-SSQRTM-40	Shipping Weight:.....	15.2 - 25.3lbs. (configuration dependent)
Fuse: (Input Power).....	5 amps, 250vac, Subminiature	Signal Circuits:	0 or 6 (optional)
Standby Timekeeping:	10 years	RF frequency range:	450-470 MHz
Memory/Time Backup:	CR2032 lithium battery, 240 mAh capacity	Channel Spacing:.....	12.5kHz
Timekeeping Accuracy:.....	±1 minute/year without correction from Ethernet time reference		
Program Retention:.....	Unlimited		
Programmable Events:.....	9,999 events total		
Schedules:	99 maximum		
Signal Duration:	Programmable 1-9 seconds or continuous On		

SiteSync IQ Remote Transmitter Optional Features

- Automatic time synchronization with Ethernet
- Flexible control of 6 signal circuits, including manual operation
- Remote Transmitter Connect web interface mode for event and circuit programming from a remote location



The following table shows the options included with each model number. The two digits following the dash in the model number indicate the power of the transmitter (05=5 watt, 10=10 watt, 30=30 watt and 40=40 watt). The A in the model number designates the transmitter antenna type. **Note:** Change to an X for campus antenna and and N for mag mount antenna.

Model No.	Ethernet	0 Signal Circuits	6 Signal Circuits
SSQRTM-05A0E	X	X	
SSQRTM-10A0E	X	X	
SSQRTM-30A0E	X	X	
SSQRTM-40A0E	X	X	
SSQRTM-05A6E	X		X
SSQRTM-10A6E	X		X
SSQRTM-30A6E	X		X
SSQRTM-40A6E	X		X

Examples: SSQRTM-05N0E has 0 signal circuits with a 5 watt transmitter and magnetic mount antenna
 SSQRTM-30X6E has 6 signal circuits with a 30 watt transmitter and a campus antenna

The American Time SiteSync IQ wireless clock series offers a selection of clocks to match a wide variety of application requirements. Plastic case, steel case, analog and digital styles will provide years of maintenance-free service.

SiteSync IQ Wireless Analog Clock Features

- Wireless time synchronization
- Built-in ultra-sensitive UHF receiver for facility wide signal reception
- Plug and play installation with no manual adjustments
- Battery clocks use six AA lithium batteries (included)
- Electric clocks - 120vac and 24vac (operate up to one hour during power interruption)
- Plastic case clocks are high-impact resistant with a shatter-resistant polycarbonate crystal
- Metal case clocks are durable steel, with powder-coat finish and convex glass crystal

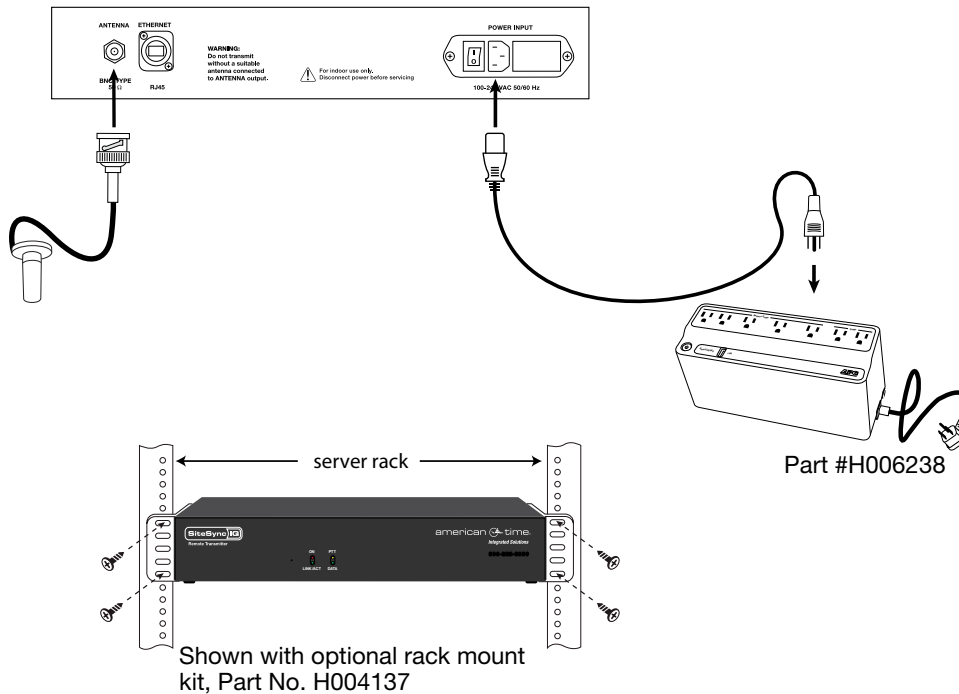
SiteSync IQ Wireless Digital Clock Features

- Super-bright red LED for high readability
- Non-glare lens
- Selectable 12 or 24-hour format (except American series digital clocks, which use the time format display of system controller)
- ± 1 second accuracy to master
- Black anodized aluminum frame (except American series digital clocks use steel enclosures)
- Visibility: 1.8 inches=75 ft.; 2.5 inches=150 ft.; 4 inches=250 ft.

Remote Transmitter Installation

Remote Transmitter with Magnetic Mount Antenna

The Magnetic Mount antenna can be used with any of the models and is specified when ordering.

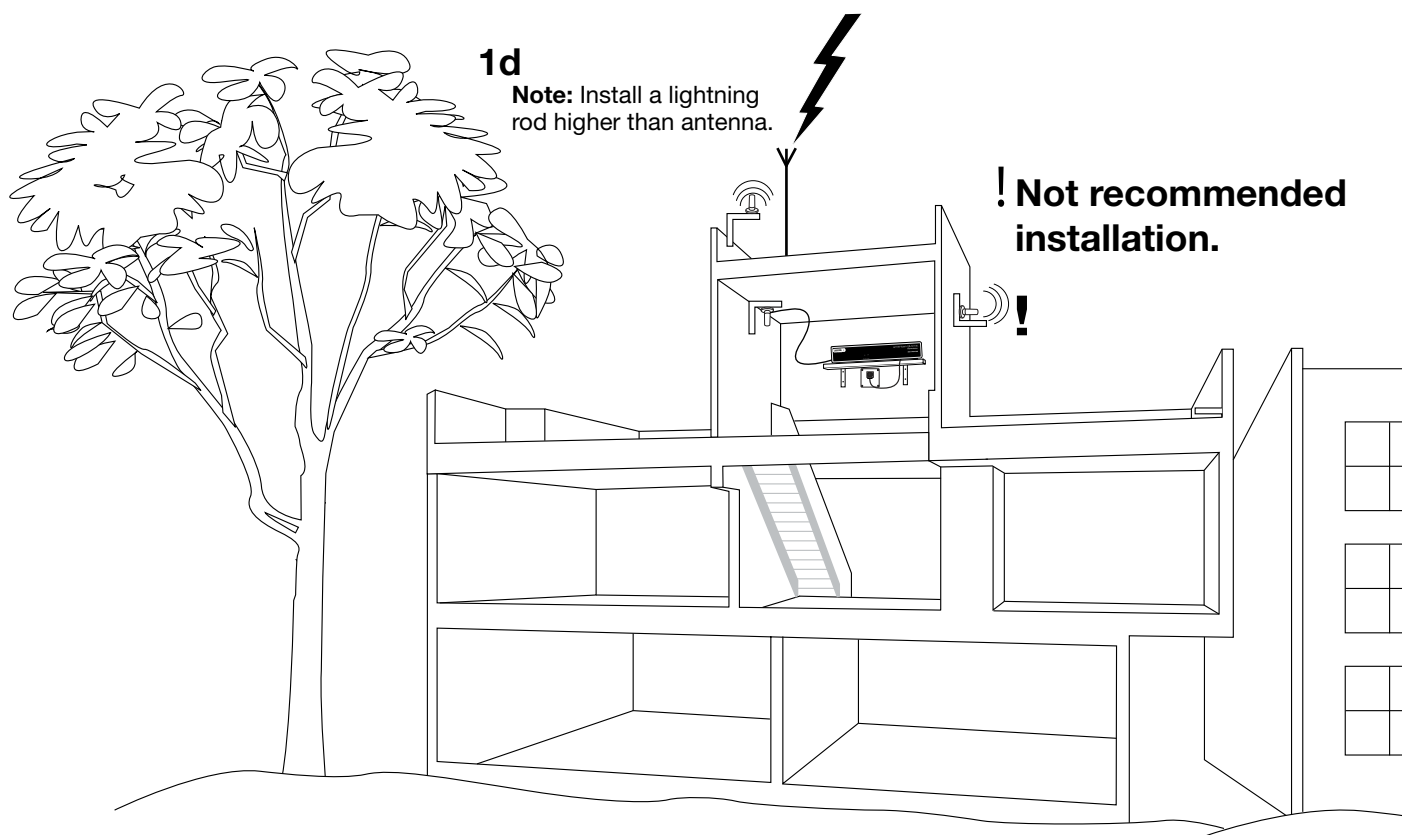
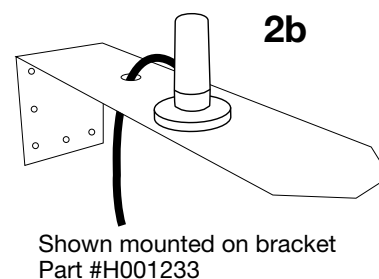
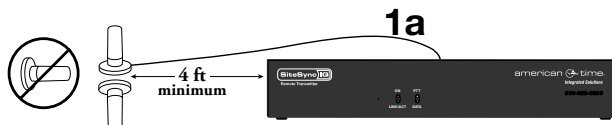


1. Choose a suitable location for the Remote Transmitter, following the safety precautions on Page 1:
 - a. Place the Remote Transmitter indoors.
 - b. Locate within 10 ft. of planned location for antenna.
 - c. Locate near an electrical outlet (120vac).
 - d. Rack or shelf mount.
 - e. Locate in an area with a network drop, or run a Ethernet data cable to the unit from a network switch or hub.
2. Install the magnetic mount antenna per the instructions on Page 6.
3. Connect the cables to the Remote Transmitter:
 - a. Connect the antenna cable to the Antenna port.
 - b. Connect the power cord to the Remote Transmitter.
 - c. Connect the power cord to 110v electrical supply (American Time recommends using surge protector/battery backup Part # H006238 shown).
4. Turn on the power to the Remote Transmitter:
 - a. Place the rocker switch on the back of the unit to the ON position as shown above.
 - b. Confirm that the red ON LED on the front of the unit is lit.

Component Location & Mounting Guidelines

- 1** Choose a suitable location for the SiteSync IQ magnetic mount antenna:
 - a. Locate the antenna at least 4 ft. away from the Remote Transmitter or other electronic equipment to minimize the potential for interference caused by the radio frequency energy emitted from the antenna.
 - b. Locate the antenna within approximately 10 ft. of the Remote Transmitter (the antenna includes 12 ft. of cable and should not be extended).
 - c. Place the antenna indoors or outside at a central location on the highest level of the facility (a rooftop penthouse usually works well, for example).
 - d. When installed outdoors, the location should be lower than other nearby building features or lightning rods to reduce the potential for lightning strikes.
 - e. Place the antenna in an area that is easily accessible for maintenance and inspection.
 - f. Avoid placing the antenna in an area where snow or ice may build up and possibly damage the antenna or cable.
 - g. Avoid placing the antenna in an area where people will touch it or come within 3 ft. of it during operation of the Remote Transmitter.
 - h. Avoid placing the antenna in an area surrounded by large metal objects that could block the radio signal and reduce signal coverage.
- 2** Mount the magnetic mount antenna vertically up or down (never horizontally):

- a. On a metal object such as the underside of a ceiling beam or air duct. Be sure to test the pull strength of the magnetic base to make sure it is safely mounted.
- b. On top of a mounting bracket, installed on the side of the building or other structure. You can use American Time Part #H001233 (shown at right).



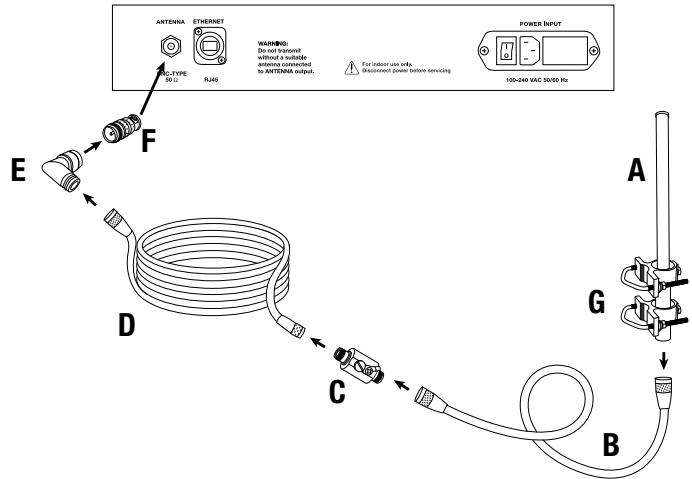
Campus Transmitting Antenna Installation

Component Location & Mounting Guidelines

The Campus Antenna kit is recommended for outdoor antenna installations and improved signal coverage. It can be used with any of the models and is specified when ordering.

The Campus Kit includes:

- A.** Heavy-duty, outdoor type 26 inch fiberglass antenna
- B.** 10 ft. COAX cable
- C.** Lightning arrestor
- D.** 50 ft. COAX cable
- E.** N female to N male right angle adapter
- F.** N female to BNC male adapter (only for direct connection to IQ Remote Transmitter)
- G.** Mounting kit



American Time recommends installing the Campus Antenna on a mast at an elevated location outdoors.

nWARNING: The SiteSync IQ Remote Transmitter should remain powered off until installation of the Campus Antenna is complete.

- 1** Select a suitable location for the SiteSync IQ Remote Transmitter and the Campus Antenna.
 - a. Locate the antenna at least 4 ft. away from the Remote Transmitter and other electronic equipment to minimize the potential for interference caused by the radio frequency energy emitted from the antenna.
 - b. Place the antenna indoors or outside at a central location on the highest level of the facility (a rooftop penthouse usually works well, for example).
 - c. Place the antenna in an area that is easily accessible for maintenance and inspection.
 - d. Avoid placing the antenna in an area where people will touch it or come within 3 ft. of it during operation of the Remote Transmitter.
 - e. Avoid placing the antenna in an area surrounded by large metal objects that could block the radio signal and reduce signal coverage.
 - f. When installed outdoors, the location of the antenna should be lower than other nearby building features or lightning rods to reduce the potential for lightning strikes.
 - g. Identify a location in the proximity of a suitable means for grounding the lightning arrester.

nNote: Cable lengths should be considered when selecting locations for both the Remote Transmitter and Campus Antenna.

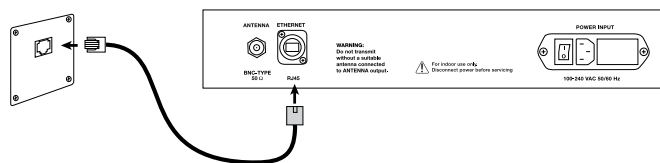
- 2** Install the Campus Antenna mast (not included) vertically. Mast should be circular and approximately 2 inches in diameter, and should be made of a non-rusting or rust-resistant rigid material.
- 3** Attach Campus Antenna (**A**) to 10 ft. cable (**B**) at mast end.
- 4** Attach mounting kit (**G**) to mast at Campus Antenna location.
- 5** Insert Campus Antenna into mounting kit and fasten set screws.
- 6** Route the 10 ft. cable (**B**) from mast to location of Remote Transmitter. Secure cable with cable ties or other suitable method.

nNote: Do not bend cable beyond original packaged coil bend.

- 7** Connect lightning arrestor (**C**) to the 10 ft. cable (**B**) and to the ground rod (not included).
- 8** Connect the 50 ft. cable (**D**) to the lightning arrestor (**C**). If the lightning arrestor is outdoors, seal it and the attached COAX connectors to prevent moisture from entering.
- 9** Connect the N female to N male right angle adapter (**E**) to the 50 ft. cable (**D**).
- 10** **A.** When connecting the Campus Antenna to the Remote Transmitter, use the BNC male connector (**F**). Connect the N female to N male right angle adapter (**E**) to the N female to BNC male adapter (**F**), and connect this adapter to the Remote Transmitter.
- 11** Ground the lightning arrestor (**C**) per the National Electrical Code and any applicable local codes. Seal the COAX connections around the arrester to prevent moisture from entering. **nNote:** This lightning arrestor is not designed to withstand a direct lightning strike. However, it can survive lightning strikes in the general area. See Troubleshooting section for information if you suspect the system has been struck by lightning.

Connecting Ethernet and Configuring Network Time Synchronization

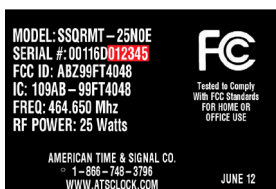
This is the required setup to provide time synchronization via Simple Network Time Protocol (SNTP) or Daytime Protocol from Internet Time Servers or an internal Network Time Server.



Ethernet requires:

1. TCP/IP Network with Internet access or connection to a Network Time Server.
2. Cat 5 or above patch cable (not included).
3. Host Name:

*Record last six digits of S/N. S/N is located on bottom of Remote Transmitter. The Host Name is used to identify the Remote Transmitter on the network.



Product Label Example

nNote: The default ethernet setting has DHCP enabled to automatically obtain an IP address from a DHCP server. If no DHCP address is received, the device will default to 192.168.10.10.

4. *Unit IP Address from Network Administrator:
5. *Subnet Mask:
6. *Gateway IP Address:
7. *DNS Server IP Address:

*Not required if DHCP is Enabled

8. Port Number (defaulted to 80):
9. SNTP Server Address:
10. Alternate SNTP Server Address:

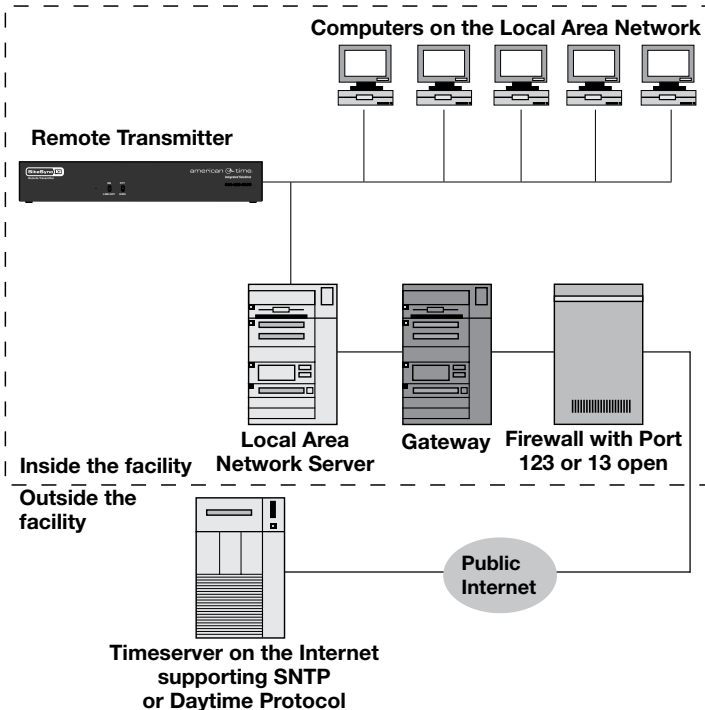
See Appendix A for a list of Internet Time Server addresses (or use the address of a server on your local network)

11. Continue to system setup section.

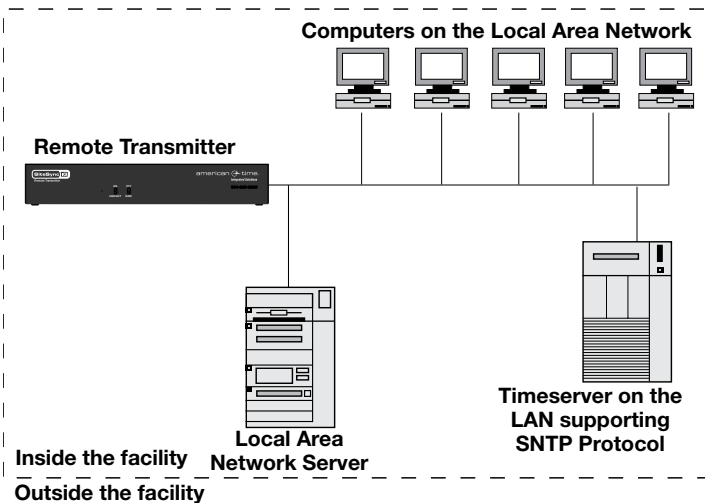
nImportant Note: Time Servers provide time sync for UTC Time, but do not set Time Zone or DST settings.

nNote: This option automatically syncs once per hour at a time preset at the factory.

Configuration 1: Receive Time Sync via the Internet (SNTP or Daytime Protocol)



Configuration 2: Receive Time Sync via the Internal Network (SNTP)



All configuration and control of the Remote Transmitter is performed through the Remote Transmitter Connect Web interface utility via a web browser. This includes Event and Circuit programming, manual circuit activation, time/date settings and other system configurations. –Ensure that you have the most current web browser (ie. Firefox, Internet Explorer, Chrome, Edge, Safari)

Note: Internet Explorer 8 & 9 are not supported.

To access Remote Transmitter Connect:

1. Ensure that the SiteSync IQ Remote Transmitter installation has been performed (pages 5-8). The default Ethernet setting has DHCP enabled to automatically obtain an IP address from a DHCP server.
2. Open a web browser. Enter the Host Name from page 8 as `http://sqrtrxxxxx/` in the web browser's Address field (Figure 1). Press the **Enter** key.

Figure 1

Note: If the Remote Transmitter is on a network without a DHCP server, the default address of the Remote Transmitter will be 192.168.10.10. In this situation, directly connect an Ethernet patch cable from the Remote Transmitter to a computer that is on the same Subnet. Example: Set the connecting computer IP address to 192.168.10.11. See your Network Administrator if you do not know how to do this.

3. A User Login window, (Figure 2) will appear. There are two available user names, **uclock** and **sclock**, which represent the user and service access levels. The user security level allows access to everything but the Configuration Tab.

User Level Access:

Enter **uclock** in lowercase letters in the User Name field and **uclock** in the Password field. This is a user login which will allow access to time/date and event menus.

Service Level Access:

Enter **sclock** in lowercase letters in the **User Name** field and **sclock** in the Password field. This is a service login which will allow access to all menus.

****Passwords may be changed in the Configuration Tab.**

Then, click the Login button.

Figure 2

4. The Remote Transmitter Connect utility will appear with the General tab selected. The tabs displayed may differ depending on the configuration of the unit.

Figure 3

For more details on the features of Remote Transmitter Connect, click on the Support link in the upper right-hand corner of the utility (Figure 3).

- Click on the Ethernet Tab and verify the Time Server DNS Address is 3.americanntp.org or if using the internal IP Address assigned by your IT department (see page 9), this can be entered here by selecting the IP Address radio buttons and entering the assigned time server addresses.

SiteSync IQ > RemoteTransmitterConnect

SUPPORT | LOGOUT 1.800.328.8996

General Set Event Circuit Ethernet MTM Messaging Configuration

Ethernet Enable: ☒ Client ☒ Server

DHCP: ☒

Unit IP Address: 192 . 168 . 010 . 124

Subnet Mask: 255 . 255 . 255 . 000

Gateway IP: 192 . 168 . 010 . 099

DNS: 010 . 111 . 039 . 001

MAC Address: 00 : 11 : 6D : 01 : CC : CC

Port Number: 80

Time Server: ☐ IP Address ☒ Domain Name (DNS)

Time Server DNS Address: 3.americanntp.org

History

Packets Received: 275237

Packets Sent: 2666

Reset Packets Rx/Tx

Update Cancel

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Figure 4

- This step is optional. If you would like to disable DHCP and enter a static IP address, uncheck the DHCP box. Enter the Unit IP Address, Subnet Mask and Gateway IP assigned from your Network Administrator and recorded in the Ethernet Configuration section on page 9. The Update button must be pressed for changes to take effect.

nNote: After changing to a static IP address, close the browser window and then re-open before trying to access the Remote Transmitter Connect configuration utility. Enter the IP address in the URL field (Figure 5) of the web browser in the following format: http://xxx.xxx.xxx.xxx/ and press the **Enter** key.

Figure 5



- Click on the Set Tab and select the appropriate local time zone from the drop down menu.

SiteSync IQ > RemoteTransmitterConnect

SUPPORT | LOGOUT 1.800.328.8996

General Set Event Circuit Ethernet MTM Messaging Configuration

Time: 8 : 40 : 52

Date: Feb 3 2016

On Demand Sync

☒ Ethernet Sync Now ✓

Update Cancel

System Controller Time Zone Configuration

Time Zone	Setting	DST	Date	Time
<input checked="" type="radio"/> Local	USCT - USA Central	AUTO	2/3/2016	08:40:52 AM

Time Zone: Local

Time Zone: USCT - USA Central

Custom Time Zone

Bias from UTC time: + 0 : 00

Daylight Saving Time: AUTO

Custom Daylight Saving

☒ Fixed Dates ☐ Floating Dates

Start: 2nd Sunday of Mar

End: 1st Sunday of Nov

Bias: + 1 : 00

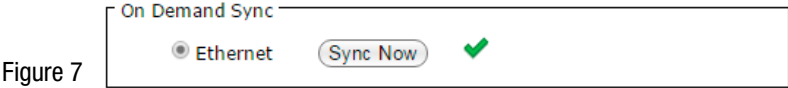
*Configurations only apply to time zone clocks

Update Cancel

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Figure 6

- 8. Daylight Saving Time default is set to AUTO. If your location doesn't observe DST, select OFF from the drop down menu.
- 9. To confirm proper setup. Enable the On Demand Sync Ethernet button and press Sync Now. If successful, a green check mark will appear next to the Sync Now button.



- 10. Verify the unit is transmitting. The PTT and Data LED's on the front of the Remote Transmitter should flash every 30 seconds unless in Quiet Mode. See Appendix F for more information on Quiet Mode.

General Tab:

The General Tab contains information about the Remote Transmitter.

The screenshot shows the 'General' tab of the 'RemoteTransmitterConnect' web interface. At the top, there's a header with 'SiteSync IQ' and 'RemoteTransmitterConnect' along with a phone number '1.800.328.8996'. Below the header is a navigation bar with tabs: 'General', 'Set', 'Event', 'Circuit', 'Ethernet', 'MTM', 'Messaging', and 'Configuration'. The 'General' tab is active. The main content area contains several fields: 'Circuit Status' with radio buttons for 'Auto' (selected) and 'Off'; 'Device Name' with the value 'Remote Transmitter'; 'Time Last Set' with the value '02-03-2016 08:46:40A (Source: ETHERNET 2)'; 'Software Version' with '0.8.0.54'; 'Serial Number' with '00116D06000A'; 'Unit Configuration' with '6318'; 'Model Number' with 'SSQRTM-25X6E'; and 'Call Sign' with 'WQFW336'. Below these fields is the text 'Last Powered On: 2016-01-28 02:50:34P'. To the right of these fields is a 'Previous/Next Signal' section with 'Event' set to 'none' and 'Circuits' set to 'NA'. There are 'Previous' and 'Next' buttons next to the 'Event' field, and 'Update' and 'Cancel' buttons at the bottom right. At the bottom of the page, there are two red status indicators: 'Quiet Mode' and 'Low Battery', followed by the 'american time Integrated Solutions' logo.

Figure 1

1. Circuit Status – This will enable the optional wireless signal circuits if set to AUTO. This field may not be selectable if the Remote Transmitter is not configured for signal circuits.
nNote: Scheduled events will not run if this is not set to AUTO.
2. Device Name – This allows the user to name the Remote Transmitter. This is useful for users that have more than one SiteSync IQ Remote Transmitter to manage.
3. Time Last Set – This will display the last date and time the Remote Transmitter was set. The source of which the date and time was set will also be displayed. The source displayed by Ethernet 1 is the first time Server IP address and Ethernet 2 is the Alt. Time Server IP address.
4. Software Version – This will display the current software version of the SiteSync IQ Remote Transmitter.
5. Serial Number – This is the serial number of the SiteSync IQ Remote Transmitter.
6. Unit Configuration – This is the configuration code of the SiteSync IQ Remote Transmitter.
7. Model Number – This is the model number of the SiteSync IQ Remote Transmitter.
8. Call Sign – This is the call sign used by the SiteSync IQ Remote Transmitter.
9. Previous/Next Signal – This will display the next circuit activation to occur.
10. Quiet Mode – This will display when the SiteSync IQ Remote Transmitter enters Quiet Mode. Please reference Appendix F for more information on Quiet Mode.
11. Last Powered On – This will display when the SiteSync IQ Remote Transmitter was last turned on. This is useful to determine if the unit has lost power.
12. Battery Low – This indicates that the internal time keeping battery needs to be replaced. See Troubleshooting section on page 27 for more information.

Remote Transmitter Connect

Web Interface

Set Tab:

The Set Tab allows you to set the time zone, daylight saving time, date, and time for your local clocks and time zone clocks.

The screenshot shows the 'Set' tab of the Remote Transmitter Connect web interface. At the top, there's a header with 'SiteSync IQ' and 'RemoteTransmitterConnect'. Below this, there are tabs for 'General', 'Set', 'Event', 'Circuit', 'Ethernet', 'MTM', 'Messaging', and 'Configuration'. The 'Set' tab is active.

Under the 'Set' tab, there are fields for 'Time' (8:40:52) and 'Date' (Feb 3, 2016). There's an 'On Demand Sync' section with a radio button for 'Ethernet' and a 'Sync Now' button. Below this, there's a 'System Controller Time Zone Configuration' table with columns for Time Zone, Setting, DST, Date, and Time. The table shows 'Local' as the selected time zone, 'USCT - USA Central' as the setting, 'AUTO' for DST, and '2/3/2016' for the date. To the right of this table, there's a 'Time Zone: Local' section with a dropdown for 'Time Zone: USCT - USA Central' and a 'Custom Time Zone' section with a 'Bias from UTC time' field.

Below the system configuration, there's a 'Time Zone Clock Configuration*' table with columns for Time Zone, Setting, DST, Date, and Time. This table has 8 rows, each with a radio button and 'TZOFF' in the Setting column. To the right of this table, there's a 'Daylight Saving Time: AUTO' section with a dropdown for 'Daylight Saving Time' and a 'Custom Daylight Saving' section with 'Fixed Dates' and 'Floating Dates' options.

At the bottom of the interface, there's an 'Update' button and a 'Cancel' button. The footer of the interface says 'american time Integrated Solutions'.

Figure 2

1. Time: This allows the user to set the time in the following format HH:MM:SS. After selecting a time change, the Update button must be pressed to take effect.
Note: Time will always be in military time.
2. Date: This allows the user to set the date. After changing the date, the Update button must be pressed to take effect.
3. On Demand Sync: The synchronization options configured on the Remote Transmitter will be displayed. The user may choose the option in which they would like to synchronize their time and press Sync Now. The time and date will be updated automatically if successful.
✓ indicates a successful sync.
✗ indicates a failed sync.
4. Remote Transmitter Time Zone Configuration: When this is selected, the Time Zone and Daylight Saving Time settings can be configured. The Update button in the lower right hand corner must be pressed for any changes to take effect.
—Time Zone: This drop down contains a list of all time zones.
—Daylight Saving Time: This drop down contains AUTO, CUSTOM, or OFF.
5. Time Zone Clock Configuration: There are 8 selectable time zone clocks. Each time zone clock can be configured to a time zone and DST. The Update button in the lower right hand corner must be pressed for any changes to take effect.
—Time Zone: This drop down contains a list of all time zones.
—Daylight Saving Time: This drop down contains AUTO, CUSTOM, or OFF.

Event Tab:

The Event Tab allows you to create, edit, print, and save your schedules.

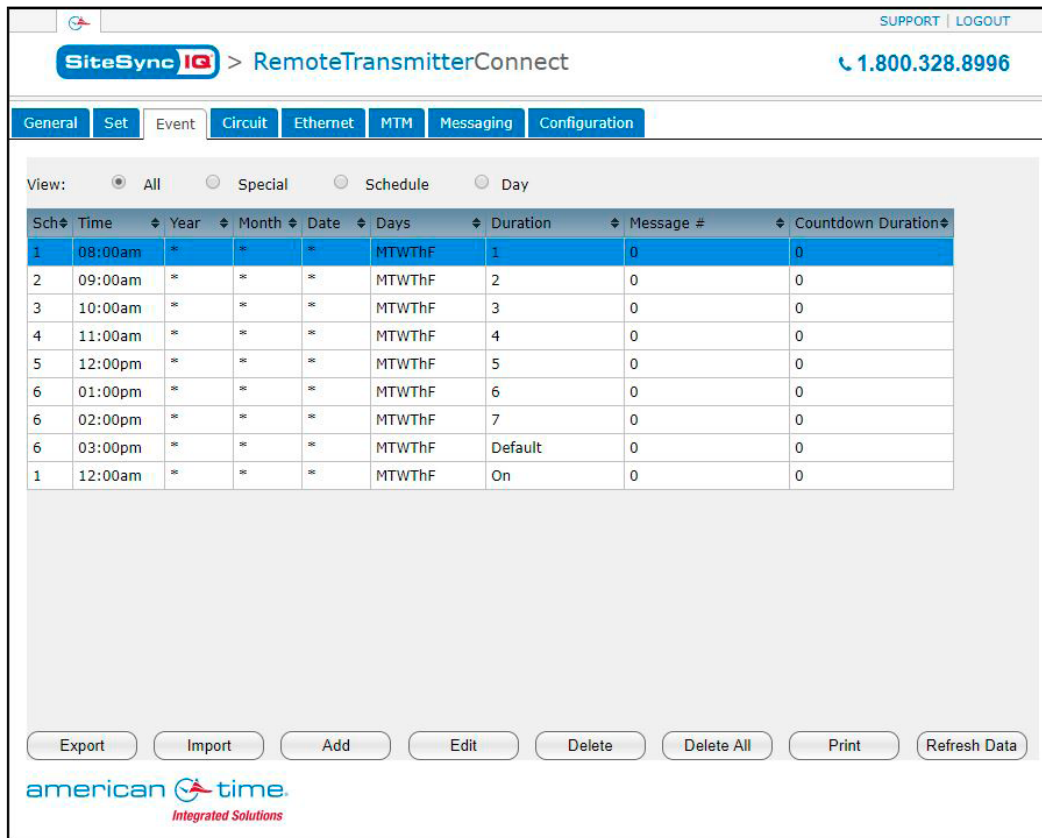


Figure 3

1. View: This row is for sorting which events should be displayed in the table below. If Schedule or Day is selected an additional drop down will appear for selection.

nNote: Press the Refresh button to update the table.

2. Export: This allows the user to export their schedules to a .ats file for backup.
3. Import: This allows the user to import a .ats file.

nNote: A browser button will appear after selecting the Import button. Selecting the browse button will allow the user to import events.

Event Tab (cont):

4. Add: This allows the user to add new events to a specified schedule. There are three types of events:
- Regular Events: A reoccurring day of the week event.
 - Special Events: An event that occurs on a specific time and date.
 - Schedule Change: A planned change of schedule on a specific time and date.
- This will prompt the following:

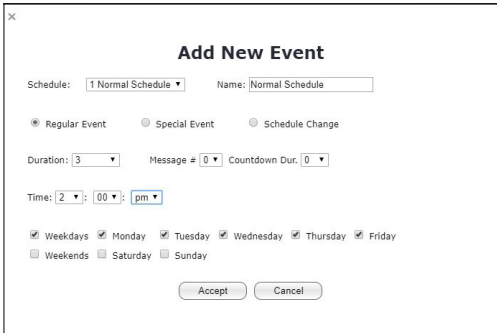


Figure 4

- a. Schedule: The current event schedule.
 - b. Schedule Name: The name of the selected schedule.
 - c. Regular Event/Special Event/Schedule Change: The event type.
 - d. Special Event Date: Specific date selection for Special Events or Schedule change Events. Does not appear for Regular Events. Date may not be in the past.
 - e. Message #: Message to be displayed on Digital Clocks. Does not apply for Schedule Change Events. Reference Manual Activation section of Remote connect for further details.
 - f. Countdown Dur: Countdown timer for Digital Clocks in minutes. Does not apply for Schedule Change Events.
 - g. Change Schedule To: Schedule selection to change to. This only appears if a Schedule Change Event is selected.
 - h. Duration: Duration of event. Does not apply for Schedule Change Events.
 - i. Time: The specified time of the event.
 - j. Weekdays (M-F)/Weekends (S-S): Day of the week selector.
 - k. Accept: Accept event entry.
 - l. Cancel: Cancel event entry.
5. Edit: This will prompt the Event Edit window for the event highlighted. This can also be accessed by double clicking on an entered event.
6. Delete: This will delete the highlighted event.
7. Delete All: This will delete all events.
8. Print: This will print the events that are displayed in the table.

Circuit Tab:

The Circuit Tab contains circuit designations to specific schedules. This tab also contains the Manual Activation feature which allows manual activation of relays.

Schedule:

SiteSync IQ > RemoteTransmitterConnect 1.800.328.8996

General Set Event **Circuit** Ethernet MTM Messaging Configuration

Schedule Manual Activation

Circuit #	Enabled	Assigned Schedule	Default Duration	Switching 1		Switching 2		Circuit Description	Schedule Description
				Schedule	Date/Time	Schedule	Date/Time		
1	<input checked="" type="checkbox"/>	1	3 Seconds	5	12-20-2016 05:00 PM	1	1-3-2017 12:00 AM	East Wing	Normal Schedule
2	<input checked="" type="checkbox"/>	1	3 Seconds	5	12-20-2016 05:00 PM	1	1-03-2017 12:00 AM	Hallways	Normal Schedule
3	<input checked="" type="checkbox"/>	1	3 Seconds	5	12-20-2016 05:00 PM	1	1-03-2017 12:00 AM	Gym & Locker Rooms	Normal Schedule
4	<input checked="" type="checkbox"/>	1	3 Seconds	5	12-20-2016 05:00 PM	1	1-03-2017 12:00 AM	Lunch Room	Normal Schedule
5	<input checked="" type="checkbox"/>	6	3 Seconds	5	12-20-2016 05:00 PM	6	1-03-2017 12:00 AM	Doors	Doors/Lights Schedule
6	<input checked="" type="checkbox"/>	6	3 Seconds	5	12-20-2016 05:00 PM	6	1-03-2017 12:00 AM	Lights	Doors/Lights Schedule

Update Cancel

american time Integrated Solutions

Figure 5

1. **Enabled:** This allows the user to enable or disable the circuit. The circuit must be enabled to run an assigned schedule. The Update button must be pressed for changes to take effect.
2. **Assigned Schedule:** This is the current schedule assigned to the circuit. The Update button must be pressed for changes to take effect.
3. **Default Duration:** This is the default duration of the circuit. Events may or may not use this default duration. The Update button must be pressed for changes to take effect.
4. **Switching 1:** This allows the user to schedule a schedule change. For example, the image above may be a typical example of a winter break schedule. The Update button must be pressed for changes to take effect.
 - a. **Schedule:** This is the schedule that the circuit will switch to at the specified date/time.
 - b. **Date/Time:** This is the date/time in which the schedule for the circuit will switch.
5. **Switching 2:** This has the same functionality as Switching 1.
6. **Circuit Description:** This allows the user to name the circuits. The Update button must be pressed for changes to take effect.
7. **Schedule Description:** This displays the schedule name as defined in the Event Edit window (Figure 9).

Manual Activation:

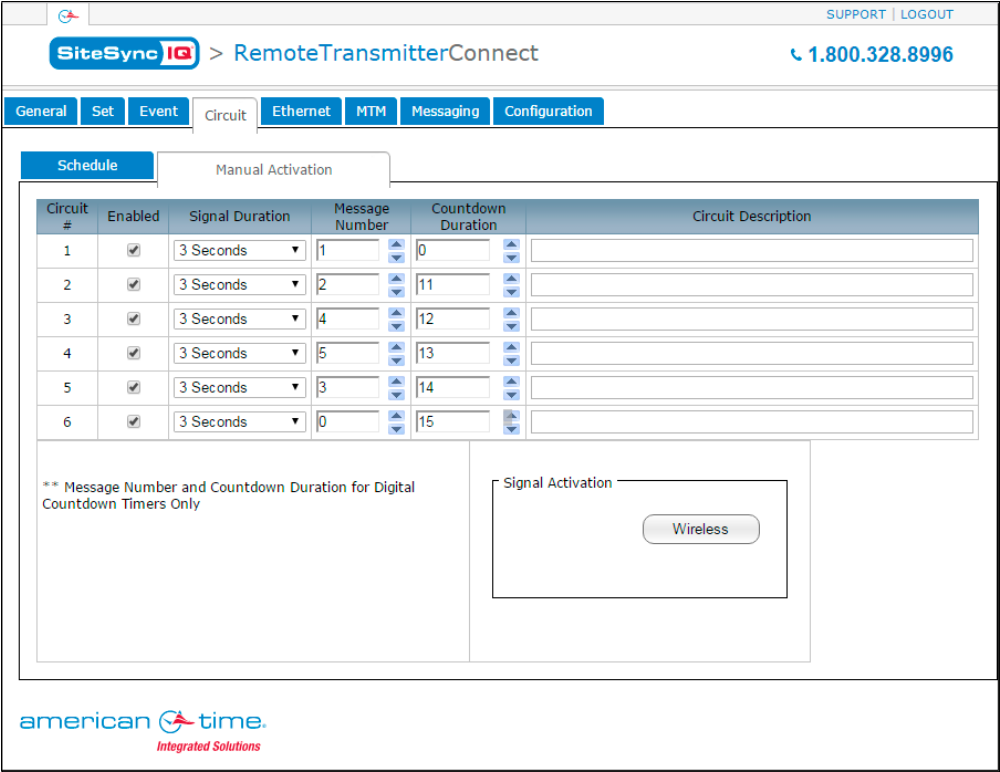
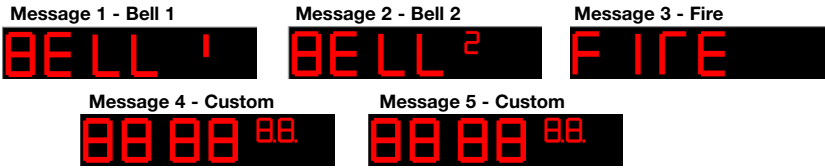


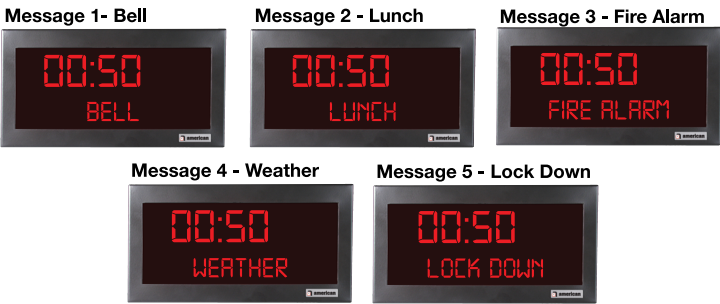
Figure 6

1. Enabled: This allows the user to enable or disable which circuits should be manually activated.
2. Signal Duration: This is the duration which the circuit will manually activate.
3. Message Number: This is used to select the message that will be displayed prior to a countdown.
nNote: This message number is only applicable if you have an SQAxxxxxC(1-6) digital clock. A message number of 0 disables this feature.

Digital Clock Message Displays



Calendar Clock Message Displays



4. Countdown Duration: This is used to select the duration of the countdown (0-59 minutes).
nNote: This countdown duration is only applicable if you have an SQAxxxxxC(1-6) digital clock. A countdown duration of 0 disables this feature.
5. Circuit Description: This is the description of the circuit as assigned in the Schedule Tab.
6. Wireless: This will signal the wireless enabled circuits only for the duration specified in the Signal Duration.

Ethernet Tab:

The Ethernet Tab contains the network settings for the SiteSync IQ Remote Transmitter.

1. **Ethernet Enable:** This allows the user to choose if the SiteSync IQ Remote Transmitter should be a client, server, or both (time synchronization).

2. **DHCP:** This is the default Ethernet setting. When this box is checked, the device will automatically obtain an IP address from a DHCP server. The address received will be displayed in the Unit IP Address boxes.

nNote: If no DHCP address is received, the device will default to 192.168.10.10. In this situation, directly connect an Ethernet patch cable from the Remote Transmitter to a computer that is on the same Subnet. Example: Set the connecting computer IP address to 192.168.10.11. See your Network Administrator if you do not know how to do this. More information is also available in the Ethernet troubleshooting section.

Figure 7

3. **Unit IP Address:** This displays the IP address of the Remote Transmitter. These boxes are normally grayed out and can only be changed if the DHCP box is unchecked. After changing all IP fields in the Ethernet Tab, press the Update button to save the configuration.
4. **Subnet Mask:** This displays the subnet mask of the Remote Transmitter. After changing all IP fields in the Ethernet Tab, press the Update button to save the configuration.
5. **Gateway IP:** This displays the assigned Gateway IP. After changing all the IP fields in the Ethernet Tab, press the Update button to save the configuration.
6. **DNS:** This displays the IP address of the network server.
7. **MAC Address:** This displays the MAC address of the SiteSync IQ Remote Transmitter. This field can't be changed in Remote Transmitter Connect.
8. **Port Number:** This Port Number is defaulted to 80 so that Remote Transmitter Connect can be displayed. This enables the web server.
9. **Time Server:** This displays two time server options, only one can be selected.
10. **Time Server IP Address:** This displays the IP address of the time server. After changing this field, press the Update button. This is referred to as Ethernet 1 which is displayed under the general tab. Time Last Set: (Source Ethernet 1).

Figure 8

11. **Alt. Time Server IP Address:** This displays an alternate IP address of a time server. After changing this field, press the Update button. This is referred to as Ethernet 2 check is displayed under the General tab, Time Last Set: (Source Ethernet 2).
12. **Time Server DNS Address:** This displays the IP address from a DNS server used for SNTP synchronization (i.e. 0.americantime.pool.ntp.org or time.nist.gov).
13. **History:** This displays a history of the Ethernet activity to and from the Remote Transmitter. This can be reset by pressing the Reset Packets Rx/Tx button.

nNote: When changing these setting in Remote Transmitter Connect, close your browser and log in again (with the new IP address, if applicable). Use caution when revising these settings, as you could lose connectivity after pressing Update.

MTM Tab:

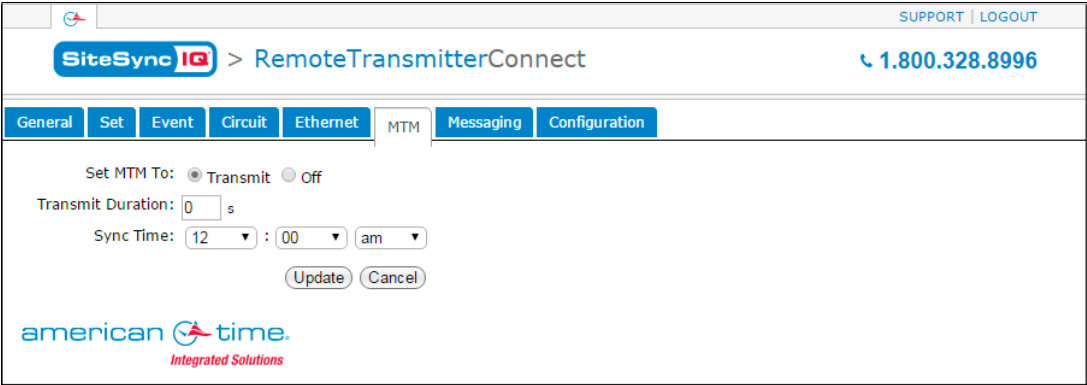


Figure 9

1. Set MTM To: This allows the user to enable or disable the Transmit to Wireless Master Clock Synchronizer. The Update button must be pressed for this change to take effect.
2. Transmit Duration: This displays the amount of time that the contact closure is enabled. **Note:** Only values from 1-9 seconds are valid entries. The Update button must be pressed for this change to take effect.
3. Sync Time: This displays the time of day that the synchronized time pulse is sent. The pulse is only sent once a day and is programmed to the nearest minute. The Update button must be pressed for this change to take effect.

Messaging Tab:

The Messaging Tab allows for the entry and storage of 10 pre-canned messages. These messages can be sent to message boards throughout the facility.

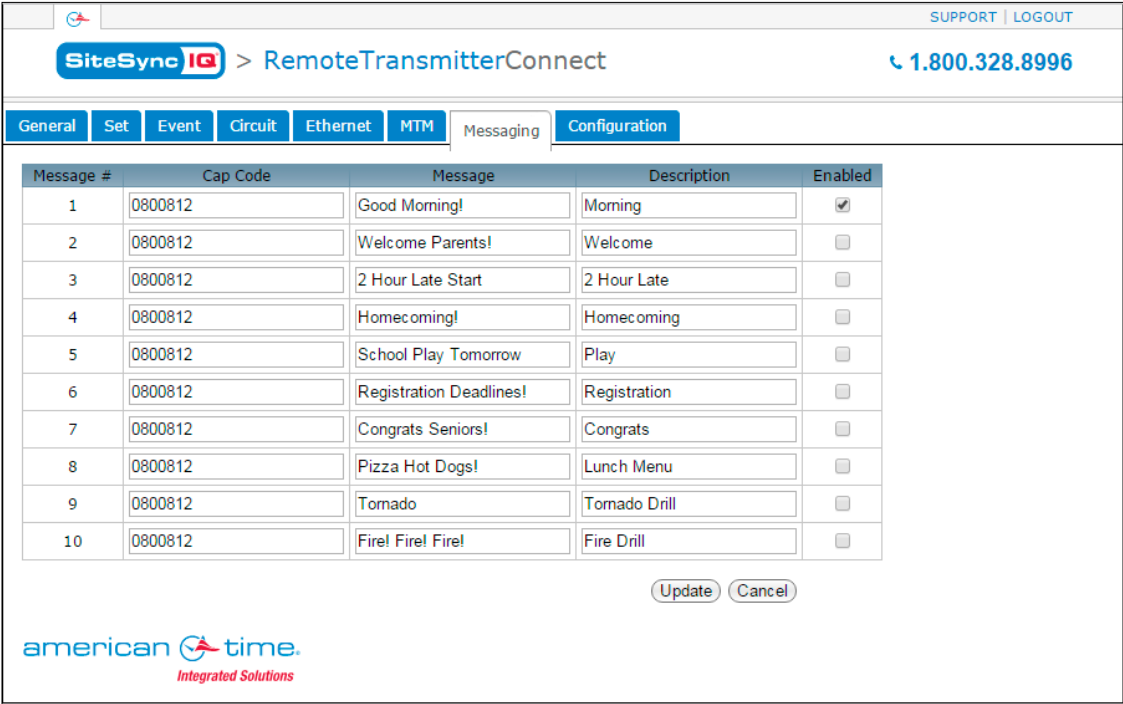


Figure 10

1. Cap Code: The Cap Code must match the Cap Code of the device receiving the message.
2. Message: The message entered may need to follow a certain format. Reference the message board reception format.
3. Description: This allows the user to enter a description of their message.
4. Enabled: Check this box and press Update to transmit the message.

Configuration Tab:

The Configuration Tab requires a service password for access. Within this tab, the user can change their passwords, update their firmware or change Quiet Mode.

The screenshot displays the 'Configuration' tab of the Remote Transmitter Connect web interface. At the top, there's a navigation bar with tabs: General, Set, Event, Circuit, Ethernet, MTM, Messaging, and Configuration (selected). Below the navigation bar, the 'Set Auto DST Dates' section includes dropdowns for Start (2nd Sunday of Mar @ 2:00) and End (1st Sunday of Nov @ 2:00), and a Bias (+1:00) dropdown. The 'User Password' and 'Service Password' sections each have a password field and a 'Verify Password' field. The 'Time Display Format' section has radio buttons for 12 Hour (selected) and 24 Hour. The 'Quiet Mode' section has radio buttons for On, Off (Temp) (selected), and Disable. The 'Update with Latest Firmware' section includes a 'Browse...' button, a 'Please Select a File.' message, and an 'Upload New Firmware' button. At the bottom, there are 'Reset All Settings', 'Update', and 'Cancel' buttons. The American Time Integrated Solutions logo is at the bottom left.

Figure 11

1. **Set Auto DST Dates:** This allows the user to change the AUTO DST dates and times. This allows for future flexibility if the DST were to change. The Update button must be pressed for changes to take effect.
2. **User Password/Verify:** This allows the user to change the User Password. The User Password must match the Verify Password to be accepted. The Update button must be pressed for changes to take effect.
3. **Service Password/Verify:** This allows the user to change the Service Password. The Service Password must match the Verify Password to be accepted. The Update button must be pressed for changes to take effect.
4. **Time Display Format:** This allows the user to change the Time Display Format. The format chosen will also be displayed on our American Digital Series Clocks. The Update button must be pressed for changes to take effect.
5. **Quiet Mode:** This allows the user to enable Quiet Mode, temporarily turn it off (for 6 hours), or completely disable it. When changing from Disable, the unit will automatically keep Quiet Mode off for 24 hours before turning it back on. The Update button must be pressed for changes to take effect. Reference Appendix F for more details on Quiet Mode.
6. **Update with Latest Firmware:** This allows a user to update the firmware of the Remote Transmitter. The firmware file must be downloaded from the support site to the PC which is running Remote Transmitter Connect.
7. **Reset All Settings:** Pressing this button will reset the Remote Transmitter to factory defaults.

nNote: Pressing this may change the IP address of the unit and it will have to be reconfigured to meet the network specifications.

For both battery and AC clocks, we recommend first installing one clock near the master and then one at the furthest location. Then install the remaining clocks in their designated locations. This will simplify system troubleshooting.

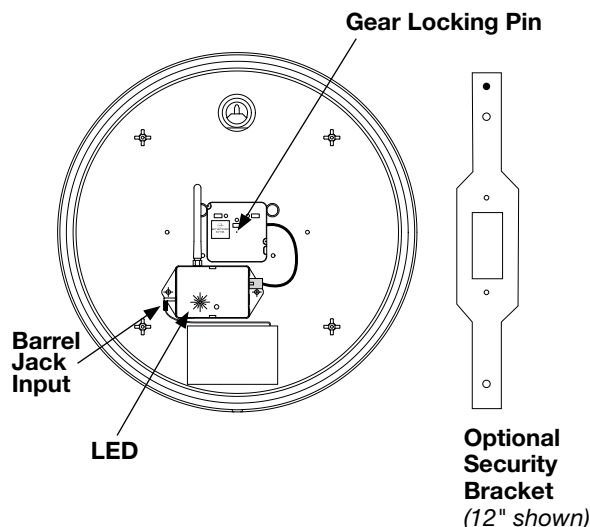
Clocks should be installed within 24 hours of installing the Remote Transmitter. After 24 hours, the Remote Transmitter will enter Quiet Mode. Quiet Mode can be manually toggled off. Reference Appendix F for more details on Quiet Mode.

Wireless Analog AA Battery Clocks (DC)

Before installation, ensure the gear locking pin (located in the center on the back of the clock) has been removed from the movement.

- 1 To activate the clock, connect barrel jack plug of battery pack to wireless receiver. The LED on the back of the clock will flash red within 30 seconds of power-up to indicate receiver is
 - n**Note:** If the LED does not flash within 30 seconds, remove barrel jack plug of the battery pack, wait for 5 seconds and reconnect it. The LED should begin flashing within 30 seconds.
- 2 When the signal is received, the LED will flash green. Be patient. The clock hands will rapid advance to the correct time. This may take up to 7 minutes.
- 3 Hang the clock after rapid advance is complete using the keyhole hanger on the back of the clock or the security bracket (sold separately).
- 4 Continue clock installation. Follow steps 1-4 for the remainder of your clocks. You may skip step 3 and confirm clock synchronization after some or all clocks have been hung.

n**Note:** Clocks will only attempt to sync to the Remote Transmitter at approximately 2 (am & pm) and 8 (am & pm) **as displayed on the clocks** and after initial power up.



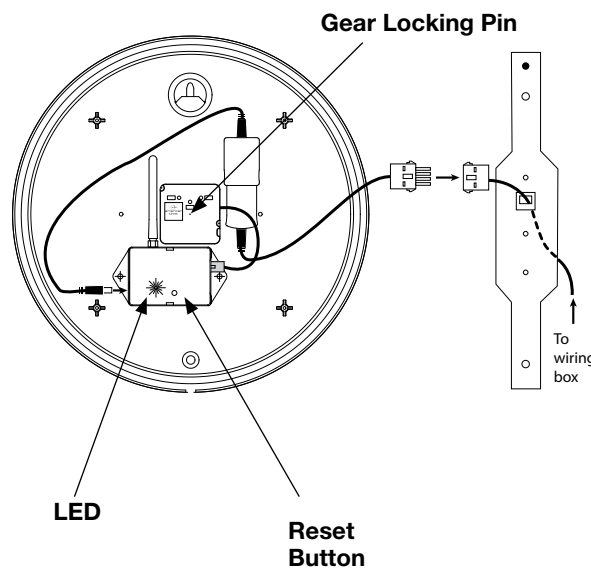
Wireless Analog AC Clocks

Before installation, ensure the gear locking pin (located in the center on the back of the clock) has been removed from the movement.

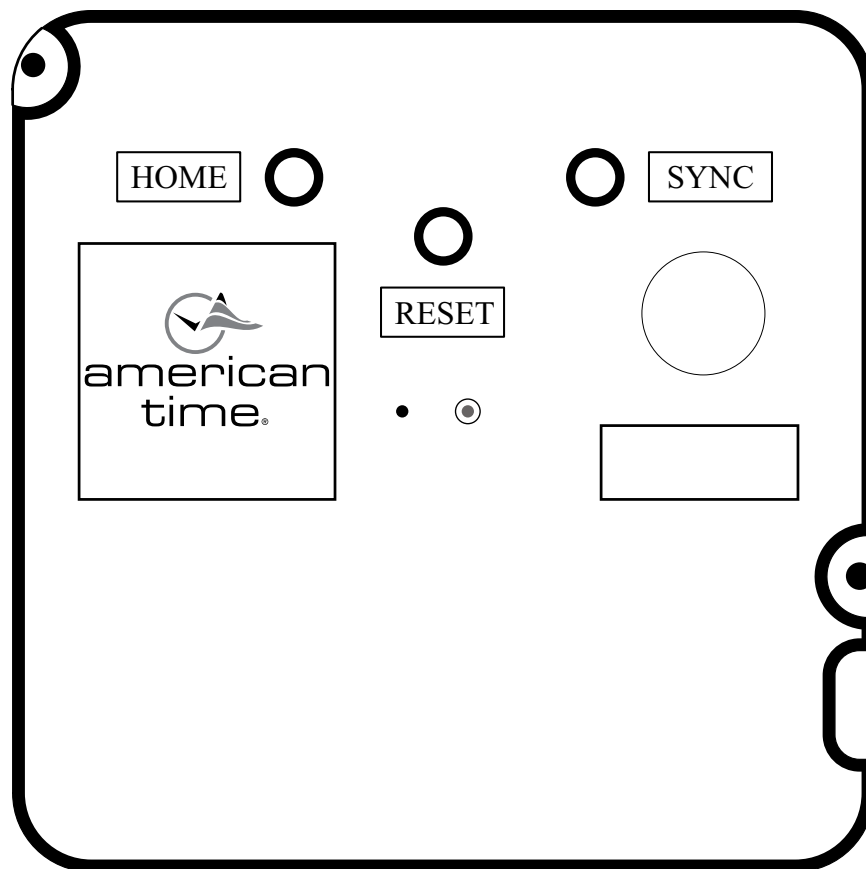
Note: Do not connect power to the clocks until the Remote Transmitter is installed and transmitting.

- 1 Connect clocks to AC power with cord kit or Molex kit and confirm green is lit after power-up.
 - n**Note:** If the LED does not flash within 30 seconds, disconnect the barrel plug on the clock receiver, wait for 10 seconds and reconnect it. The LED should begin flashing within 30 seconds.
- 2 When the signal is received, the LED will flash green. Be patient. The clock hands will rapid advance to the correct time. This may take up to 7 minutes.
- 3 Hang the clock once signal reception is verified and clock is operating correctly using the keyhole hanger on the back of the clock or the security bracket (sold separately).
- 5 Continue clock installation. Follow steps 1-4 for the remainder of your clocks. You may skip step 3 and confirm clock synchronization after some or all clocks have been hung.

n**Note:** Clocks will only attempt to sync to the Remote Transmitter at approximately 2 (am & pm) and 8 (am & pm) **as displayed on the clocks** and after initial power-up or reset.



120vac model shown



Enlarged Approximately 200%

Headway Movement for Analog Clocks

Sync Button: This button is used to sync the clock to the master controller. The master controller must be out of Quiet Mode in order to perform this function. Reference Appendix J in the Installation Manual for more details on Quiet Mode.

Home Button: This button is used to return the clock hands to the 12:00 or Home position. Can be used to verify if the hands are set in the right position.

Reset Button: This button is used to sync the clock to the master controller when the clock is in the Home position. The master controller must be out of Quiet Mode in order to perform this function. Reference Appendix J in the Installation Manual for more details on Quiet Mode.

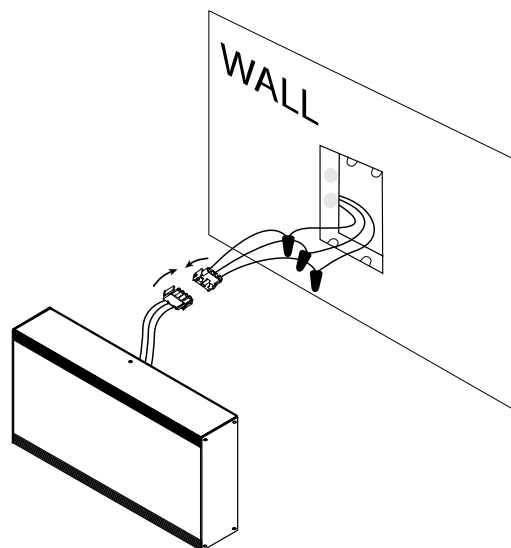
Wireless Digital Clock Installation

Note: Time format (12 or 24 hour) for Wireless Digital Clocks is set in Remote Transmitter Connect. The format can be viewed or changed in Remote Transmitter Connect under the Configuration Tab, Time Display Format 12 Hour 24 Hour.

Digital Single Display Surface Mounting

CAUTION: RISK OF ELECTRICAL SHOCK - Disconnect and lock out power to the electrical box before installing or servicing the clock.

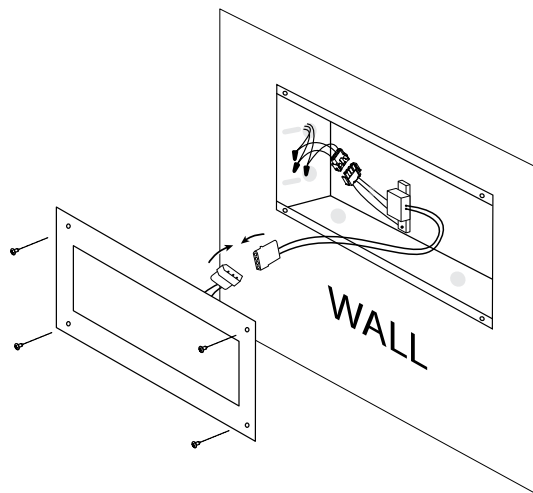
- 1 Remove the hanger from the clock by removing the screw on top of the clock.
- 2 Mount the hanger on the wall to a single or double gang box.
- 3 Make electrical connections (black to hot, white to neutral and green to ground) for the Molex cable (not wired to the clock) to a non-switched electrical circuit wiring using UL approved wire nuts. Route field wiring away from sharp projections and corners.
- 4 Join the wall and clock Molex together.
- 5 Mount the clock on the hanger and secure with the screw removed in Step 1.
- 6 Remove plastic protector from display face.
- 7 Apply power to the circuit and confirm correct operation.



Digital Single Display Flush Mounting

CAUTION: RISK OF ELECTRICAL SHOCK - Disconnect and lock out power to the electrical box before installing or servicing the clock.

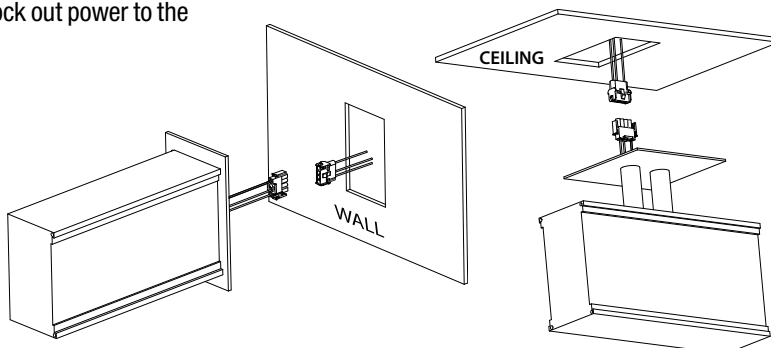
- 1 Remove the four sheet metal screws that hold the cover assembly and enclosure base together. Be sure to keep the sheet metal screws for reassembly.
- 2 Mount the enclosure base into the wall. Opening is 12½" x 7½" x 3½".
- 3 Run interconnecting field wires through the enclosure base.
- 4 Make electrical connections (black to hot, white to neutral, green to ground wires) to non-switched electrical circuit wiring using UL approved wire nuts. Route field wiring away from sharp projections, corners and internal components.
- 5 Join both Molex connectors together, placing excess wiring and Molex connectors into the box.
- 6 Re-attach the cover assembly to the enclosure base using the sheet metal screws removed in Step 1.
- 7 Remove plastic protector from display face.
- 8 Apply power to the circuit and confirm correct operation.



Digital 2-Sided Display - Ceiling or Wall Mount

CAUTION: RISK OF ELECTRICAL SHOCK - Disconnect and lock out power to the electrical box before installing or servicing the clock

- 1 Make electrical connections (black to hot, white to neutral and green to ground) for the Molex cable (not wired to the clock) to non-switched electrical circuit wiring using UL approved wire nuts. Route field wiring away from sharp projections and corners.
- 2 Join the wall/ceiling and clock Molex together.
- 3 Mount the clock to the ceiling (4" box) or wall (single or double gang box).
- 4 Remove plastic protector from display face.
- 5 Apply power to the circuit and confirm correct operation.



Digital Clock Manual Operation Instructions (Does Not Apply for American Series)

There are eight modes. They are time, month/day, year, 12/24 hour format, Daylight Saving Time, time zone location, brightness and time correction. The display button will display these modes. To modify settings in any mode use the Set 1 and Set 2 buttons.

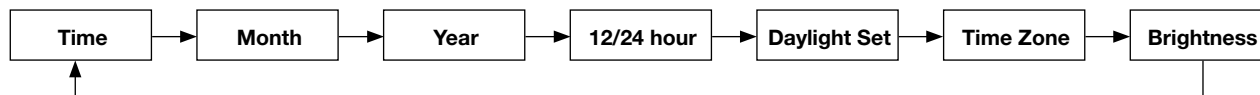
nNote: If the SiteSync IQ Remote Transmitter is operating properly, there is no need to set the digital clocks. They should automatically correct themselves from the Remote Transmitter every minute when they are receiving a signal. The only functions that you may wish to change are the time format (12/24 hour) and time zone code.

To manually set the digital clock, complete the following:

- ❶ Press the display button to begin the sequence.
- ❷ Set the Month and Day. The Set 2 button will advance the month and the Set 1 button will advance the day.
- ❸ Press the display button to continue to the year selection
- ❹ Set the year. The Set 2 button decreases the year and the Set 1 button increases the year.
- ❺ Press the display button to continue to the 12/24 hour selection
- ❻ Set the time format to 12 or 24 hour using the Set 1 or Set 2 buttons.
- ❼ Press the display button to continue to Daylight Saving Time.
- ❽ Set the Daylight Saving Time. The Set 2 button increases the Daylight Saving Time code and the Set 1 button decreases the Daylight Saving Time zone.

nNote: 0 = No Daylight Saving Time - with SiteSync IQ Remote Transmitter automatic synchronization
1 = Automatic Daylight Saving Time (USA)

- ❾ Press the display button to continue to the time zone settings. A 7 will be displayed as the first digit indicating the time zone selection.
 - ❿ Set the time zone code. The Set 2 button increases and the Set 1 button decrease the time zone code.
- nNote:** 0 should be used for wireless operation. Time zone codes run from 0 to 31. 0 is UTC time. Codes 1 to 12 add to UTC and 31 to 21 subtract from UTC. For example: Code 5 is UTC + 5 hours and Code 26 is UTC - 5 hours.
- ⓫ Press the display button until the time is displayed.
 - ⓬ Set the time. The Set 1 button advances the hours and the Set 2 button advances the minutes.

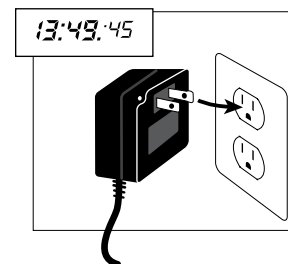


Flowchart: Digital Clock Modes

Wireless Digital Clock Sync Procedure

nNote: American Time recommends testing each digital clock at the installation location prior to mounting. The Remote Transmitter must be installed and transmitting. Clocks should be installed within 24 hours of installing the Remote Transmitter. After 24 hours, the Remote Transmitter will enter Quiet Mode. Quiet Mode can be manually toggled off. Reference Appendix F for more details on Quiet Mode.

- ❶ Plug AC wall adapter into 120vac wall outlet. Adjust time to an incorrect setting using the Set 1 or Set 2 buttons. For American series digital clocks, there are no buttons. See Step 2.
- ❷ Verify synchronization takes place within 2-5 minutes. American series digital clocks will display "U 40" or other message at startup and synchronize within 1 minute of power-up.



Introduction

Transmitter and
System Setup

Clock
Installation

Troubleshooting

Appendix

Glossary

If you have any of these problems, follow the appropriate steps:

1. System controller appears off (Red ON-LED not lit) when power is connected:

- Disconnect power and check fuse in power entry module on rear of device. Replace if necessary.

2. Wireless analog clocks not synchronized with Remote Transmitter:

- Verify the Remote Transmitter is transmitting. PTT and Data LED's should be flashing every 30 seconds, unless the Remote Transmitter is in Quiet Mode. Reference Appendix F for more details on Quiet Mode.



3. Remote Transmitter is not transmitting:

- If PTT and Data LED's are not flashing:

-If your system has the campus antenna kit, it may have been hit by lightning, even if there are no visible signs of damage to the system equipment. If this is the case, the signal coverage will be greatly reduced and the system clocks may not be able to receive the signals from the transmitter. The lightning arrester (item D shown in "Campus Transmitting Antenna Installation" section) contains a gas discharge tube which is designed to protect the transmitter and attached equipment from lightning damage. There is no visible way to determine if the gas discharge tube is good or not. The only way to check the gas tube is to use an Ohmmeter. If the unit is bad, the Ohmmeter will show a "Short". If the unit is in good condition, it will show a high resistance. A replacement discharge tube is available from the manufacturer, or the entire lightning arrester (AT part #H003491) can be replaced by contacting American Time.

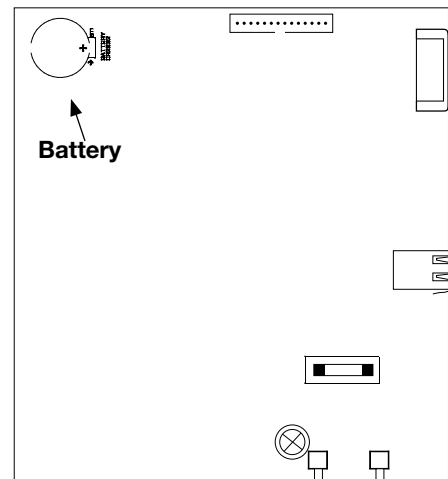
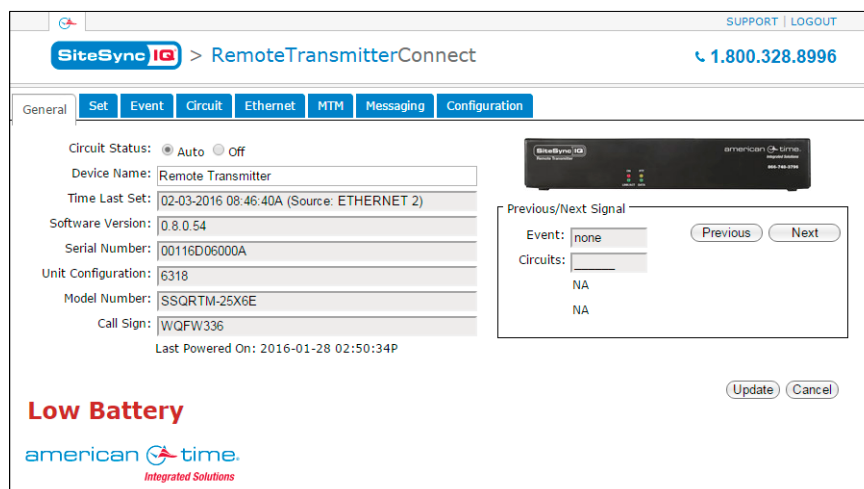
4. Not able to connect to Remote Transmitter Connect:

- See Remote Transmitter Connect Troubleshooting section on Page 28.

5. Incorrect time is displayed by Remote Transmitter Connect after loss of power:

- Backup battery may be dead. Check for "Low Battery" message in lower left corner of Remote Transmitter Connect General Tab. If this message is displayed, replace battery with new CR2032 or equivalent 3v lithium battery. Install battery with + side up, as shown below.

CAUTION: Before changing the battery, make sure to remove power cord from Remote Transmitter.



Front of Remote Transmitter

6. Power outage during Daylight Saving Time correction:

- If there is a power outage during the correction period for Daylight Saving Time, the secondary clocks might not correct. In this case, the clocks can be reset manually (see Clock Troubleshooting) or they will automatically reset during their next reception attempt after the power is restored.

7. Unable to synchronize with Ethernet Time Source:

- Refer to the Ethernet Troubleshooting Guide.

9. Lost or forgotten Password:

- Contact American Time Technical Support at the number listed below.

10. SiteSync IQ Remote Transmitter locks up:

- Remove power from the unit by switching the Power Input switch off, wait 5 seconds, then turn the unit back on.

If the problem cannot be resolved after following these steps, call Technical Support at American Time at 800-328-8996.

If you have trouble connecting the SiteSync IQ Remote Transmitter via Ethernet, follow these troubleshooting steps:

1. Check the Ethernet cable connection to the SiteSync IQ Remote Transmitter. Make sure the patch cable is securely connected to the Ethernet RJ-45 port and that it is not damaged. Have the cable tested or connect a computer or another Ethernet device to this cable to confirm proper connection. The Green LINK/ACT LED on the front of the Remote Transmitter should be flashing when a connection is established.
2. Confirm all Network settings (see "Ethernet Installation" section of this manual). Make sure the SiteSync IQ Remote Transmitter is configured properly.
3. Change the Time Server IP address to a different timeserver among those listed in Appendix A. Perhaps the timeserver that the remote transmitter is attempting to communicate with is down or not responding quickly enough due to network traffic, etc.
4. If using a Static IP address, confirm another device or computer on the network is not using the same Static IP address. The Network Administrator should be able to resolve any conflicts.
5. Ensure that the Network has port 123 open for SNTP or port 13 open for Daytime Protocol.
6. Ping the IP address of the unit from another computer to see if it is responding. Check with your Network Administrator if you do not know how to do this.
7. Test the time server by attempting to get a time stamp from another computer. Check with your Network Administrator if you do not know how to do this.

If the problem cannot be resolved after following these steps, please call Technical Support at American Time at 800-328-8996.

If you have trouble connecting to the Remote Transmitter Connect software, follow these troubleshooting steps:

1. Check the Ethernet cable connection to the SiteSync IQ Remote Transmitter. Make sure the patch cable is securely connected to the Ethernet RJ-45 port and that it is not damaged. Have the cable tested or connect a computer or another Ethernet device to this cable to confirm proper connection. The Green LINK/ACT LED on the front of the Remote Transmitter should be flashing when a connection is established.
2. If the Remote Transmitter is configured in DHCP mode and you are not able to connect to Remote Transmitter Connect, ensure that the device is on a network that will serve DHCP addresses. If no DHCP server is present or fails to receive an address, the Remote Transmitter will default to 192.168.10.10. Try connecting to the Remote Transmitter by typing in its IP address in the address field of the browser in this format: `http://xxx.xxx.xxx.xxx/` or Host Name: `http://sqrtrxxxxxx/` and click **Enter**. **Note:** The connecting computers IP address must be on the same subnet.

Example 1 - IP address



Example 2 - Host Name



3. If the Remote Transmitter is configured with a Static IP address and you are not able to connect to Remote Transmitter Connect, ensure that the Remote Transmitter has a unique Static IP address. Try connecting to the Remote Transmitter by typing in its IP address in the address field of the browser in this format: `http://xxx.xxx.xxx.xxx/` and click **Enter**.

Note 1: The connecting computers IP address must be on the same subnet.

Note 2: If you can't connect to the Remote Transmitter on your network. Directly connect an Ethernet patch cable from the Remote Transmitter to a computer that has an IP address set to 192.168.10.11. See your Network Administrator if you do not know how to do this.

Example:

4. Confirm another device or computer on the network is not using the same Static IP address. The Network Administrator should be able to resolve any conflicts.
5. Ping the IP address of the unit from another computer to see if it is responding. Check with your Network Administrator if you do not know how to do this.

Reset Network Settings

If the user is unable to connect to the Remote Transmitter from the Remote Connect application after following the steps above, this process will **reset the Remote Transmitter to DHCP, and the port number to 80**.

1. Obtain a pointed object, such as a paperclip.
2. Insert the pointed object into the hole on the front of the Remote Transmitter and push the button. The PTT LED on the front of the transmitter should turn a solid yellow color.
3. Hold the button down until the LED starts flashing (this will take approximately 10 seconds).
4. Remove the pointed object. The Remote Transmitter is now in DHCP mode with port 80.

If the problem cannot be resolved after following these steps, please call Technical Support at American Time at 800-328-8996.

Wireless Analog Clock Troubleshooting

Quiet Mode- With Quiet Mode enabled, clocks may not correct until the hours of 12AM-6AM. If clock corrections are needed during the day, Quiet Mode can be disabled in Remote Connect under the Configuration menu. Click on the Quiet Mode Disable button. (Reference Appendix F).

If **ALL** clocks are not synchronizing:

1. **Review Remote Transmitter troubleshooting.** (Reference “Troubleshooting Remote Transmitter” section on Page 27)
 - a. The PTT and DATA LED's on the front of the Remote Transmitter will flash every 30 seconds if it is set up properly. However, in Quiet Mode the TX will not appear every 30 seconds.
2. **Contact American Time Technical Support at 800-328-8996.**

If only **SOME** clocks are not synchronizing, continue with the trouble shooting steps.

1. **If using battery clocks, confirm the battery voltage and polarity:**
 - a. Using a multi-meter, verify the voltage is between 1.45-1.80V at the battery pack. Clocks will not function properly below 1.45V.
 - b. Polarity of the batteries inside the battery pack after installation.
 - c. Barrel jack plug of battery pack is connected to the wireless Receiver module.

2. **If using AC clocks, confirm the power for the clocks:**

- a. Barrel connector at the clock is connected and secure.
- b. Green LED is lit on the receiver.

3. **Confirm signal by resetting clock at location:**

Battery Clocks

- a. Disconnect barrel jack plug from wireless Receiver module.
- b. Reconnect barrel jack after waiting at least 5 seconds.
- c. Watch for LED to flash, will flash red for approximately one minute after power is applied until a valid signal is received. LED will flash green once signal is received.

AC Clocks

- a. Press and release the reset button on the back of the receiver with power supplied.
- b. Watch for LED to flash, will flash red for approximately one minute after power is applied until a valid signal is received. LED will flash green once signal is received.

4. **Clocks that Slow Tick** - Normal startup, the clock will tick once every 2-3 seconds. Wait 5 minutes for clock to get signal.
5. **Out of Signal Range** - If the clock has not received a signal within 5 minutes the clock will run to between 2:00-2:30 and run normally. Move clock within a known signal area and re-try, the clock may be too far from the system controller or in an interference area.
6. **Hand Obstructions** – If hands are touching each other, the dial or the crystal the clock may become off time. (Reference Instruction Sheet 2080 to rehome and reposition clock hands)
7. **Hands Physically Moved** - Clock hands cannot be physically moved, they are set at the factory to a “Home” position. If the hands are physically rotated, the home position will be off resulting in the time being off (reference Instruction Sheet 2080 to rehome and reposition clock hands).
8. **Hours Off** - Remove the label on the movement and verify the rotary switch is set to MT. Switch must be set to MT no matter what time zone the clock is located. **nNote:** This step may not apply if clocks were received after 4/3/12.
9. **Minutes Off** - The clock may have been jarred during shipment or dropped resulting in the hands being a few minutes off (reference Instruction Sheet 2080 to rehome and reposition clock hands).

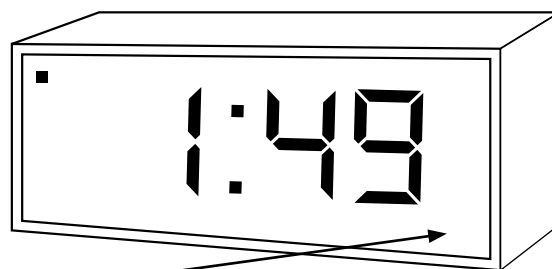
nNote: The clock(s) will only attempt to sync to the SiteSync IQ Remote Transmitter at approximately 2am/pm and 8am/pm as displayed on the clock(s) or after the clock(s) are initially powered up.

If problems cannot be resolved after following these steps, please call Technical Support at American Time at 800-328-8996.

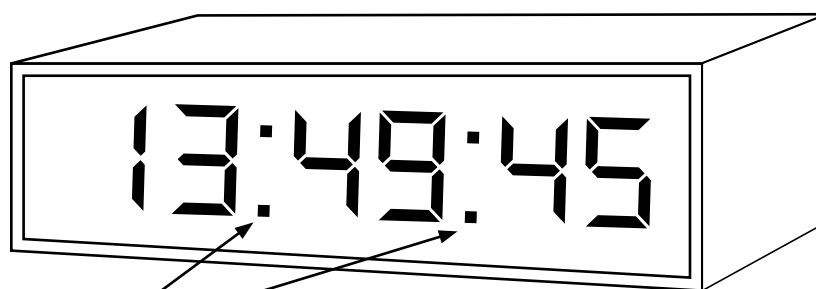
Wireless Digital Clock Troubleshooting

1. If all clocks are not synchronizing:
 - a. Review Remote Transmitter troubleshooting.
 - b. Contact American Time Technical Support at 800-328-8996.
 2. If only some clocks are not synchronizing, continue with the troubleshooting steps.
 3. Confirm signal:
 - a. Adjust time to an incorrect setting by pressing SET1 and SET2 buttons on the back of the digital clock.
Note: American series has signal indicator dot in the lower right corner of the clock display or colon dots flash when wireless time update signal is received.
 - b. Wait until the top of the minute and verify time synchronizes to the Remote Transmitter.
 4. Move the clock closer to the transmitter or to an area where another clock is working (if poor signal coverage is suspected) and reset the clock time per digital clock troubleshooting (Step 3 above).
- If the problem cannot be resolved after following these steps, please call Technical Support at American Time at 800-328-8996.

American Series



Signal Indicator: Blinks On/Off whenever the wireless time update signal is received



Colons: Blink Off/On whenever the wireless time update signal is received

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Note: Please reference <http://tf.nist.gov/tf-cgi/servrs.cgi> for the latest NIST Internet Time servers list, which includes the status of each server.

Using the SiteSync IQ Remote Transmitter as a Time Server

The SiteSync IQ Remote Transmitter with the Ethernet port can be used as a time server supporting the SNTP and Daytime protocols and can be used to synchronize computers or other devices via the Ethernet.

To set up your computer or other device to synchronize to the SiteSync IQ Remote Transmitter, simply enter the IP address of the Remote Transmitter as the time server address for the computer or device.

In Windows XP:

1. Right-click your clock and then click Adjust Date/Time.
2. Click the Internet Time tab. click the Server down arrow, and then enter the IP address of the Remote Transmitter you wish to synchronize this computer to (example: 192.168.1.200).
3. Click Update Now. Windows XP will connect to the Remote Transmitter and set the computer's clock.

In Windows 7:

1. Right-click your clock and then click Adjust Date/Time.
2. Click the Internet Time tab, and then click Change Settings.
3. Check Synchronize with an Internet time server, enter the IP address of the Remote Transmitter you wish to synchronize this computer to (example: 192.168.1.200), and then click OK.

In Windows 10:

1. Open the Control Panel (icons view), and click on the Date and Time icon.
2. Click on the Internet Time tab, and click on the Change settings button.
3. If prompted by UAC, click/tap on Yes.
4. Check the Synchronize with an Internet time server box, select a time server, and click on Update now.
5. select server box and enter AllSync IQ master you wish to synchronize this computer to (example: 192.168.1.200), and then click OK.

Important Notes:

- Setting up your computer to synchronize to the Remote Transmitter via Ethernet does not account for time zone and Daylight Saving Time settings, which must be properly set on the computer (they are not transferred via Ethernet).
- The computer or other device being synchronized to the Remote Transmitter must be on the same network as the Remote Transmitter, or have access to it through a firewall (port 123 open for SNTP and port 13 open for Daytime Protocol).
- If your computer is on a domain, it is set up to get the time from the domain controller and you will not be able to perform the above tasks. Domain controllers using the Windows Time Service can be set up by your network administrator to synchronize directly to time servers on the Internet or to the Remote Transmitter. Contact American Time Technical Support at 800-328-8996 with any questions.

Appendix B: Supported Time Zones

Time Zone Code	Description	Hours Difference from UTC (Winter)	Hours Difference from UTC (Summer)	Automatic Daylight Saving Time Adjustment?
00	LMT (Local Mean Time) - based on longitude	CALCULATED	CALCULATED	CONFIG
01	USA Alaska	-9	-8	YES
02	USA Aleutian (HAST/HADT)	-10	-9	YES
03	USA Arizona	-7	-7	NO
04	USA Atlantic / Puerto Rico (AST)	-4	-4	NO
05	USA Central (CST/CDT)	-6	-5	YES
06	USA Chamorro (chST)	+10	+10	NO
07	USA Eastern (EST/EDT)	-5	-4	YES
08	USA Hawaii (HST)	-10	-10	NO
09	USA Indiana East	-5	-5	NO
10	USA Mountain (MST/MDT)	-7	-6	YES
11	USA Pacific (PST/PDT)	-8	-7	YES
12	USA Midway Island / Samoa (SST)	-11	-11	NO
13	USA Wake Islands (WAKT)	+11	+11	NO
14	UTC+0	+0	+0	CONFIG
15	UTC+1	+1	+1	CONFIG
16	UTC+2	+2	+2	CONFIG
17	UTC+3	+3	+3	CONFIG
18	UTC+4	+4	+4	CONFIG
19	UTC+5	+5	+5	CONFIG
20	UTC+6	+6	+6	CONFIG
21	UTC+7	+7	+7	CONFIG
22	UTC+8	+8	+8	CONFIG
23	UTC+9	+9	+9	CONFIG
24	UTC+10	+10	+10	CONFIG
25	UTC+11	+11	+11	CONFIG
26	UTC+12	+12	+12	CONFIG
27	UTC+13	+13	+13	CONFIG
28	UTC-1	-1	-1	CONFIG
29	UTC-2	-2	-2	CONFIG
30	UTC-3	-3	-3	CONFIG
31	UTC-4	-4	-4	CONFIG
32	UTC-5	-5	-5	CONFIG
33	UTC-6	-6	-6	CONFIG
34	UTC-7	-7	-7	CONFIG
35	UTC-8	-8	-8	CONFIG
36	UTC-9	-9	-9	CONFIG
37	UTC-10	-10	-10	CONFIG
38	UTC-11	-11	-11	CONFIG
39	UTC-12	-12	-12	CONFIG
99	Custom Time Zone	CONFIG	CONFIG	CONFIG

Turn on the power to the Remote Transmitter

Connect to the Remote Transmitter through a web browser to Remote Transmitter Connect and view the status information under the General menu.

The screenshot shows the 'RemoteTransmitterConnect' web page. The top navigation bar includes 'SUPPORT | LOGOUT' and a phone number '1.800.328.8996'. Below the navigation bar are tabs for 'General', 'Set', 'Event', 'Circuit', 'Ethernet', 'MTM', 'Messaging', and 'Configuration'. The 'General' tab is active, showing the following fields:

- Circuit Status: ☒ Auto ☐ Off
- Device Name: Remote Transmitter
- Time Last Set: 02-03-2016 08:46:40A (Source: ETHERNET 2)
- Software Version: 0.8.0.54
- Serial Number: 00116D06000A
- Unit Configuration: 6318
- Model Number: SSQRTM-25X6E
- Call Sign: WQFW336
- Last Powered On: 2016-01-28 02:50:34P

On the right side, there is a 'Previous/Next Signal' section with 'Event: none' and 'Circuits: NA'. Below this are 'Previous' and 'Next' buttons. At the bottom right are 'Update' and 'Cancel' buttons.

At the bottom left, there are two red alerts: 'Quiet Mode' and 'Low Battery'. The American Time logo is at the bottom left.

1 Last Time Set:

This displays when the time was last set on the Remote Transmitter.

2 Software Version:

This displays the software version and the date it was created.

- Software Version:

3 Serial Number:

This displays the IQ Remote Transmitter's serial number.

- Serial Number:

4 Unit Configuration:

This displays the model configuration of the IQ Remote Transmitter, set at the factory.

- Unit Configuration Code:

5 Model Number:

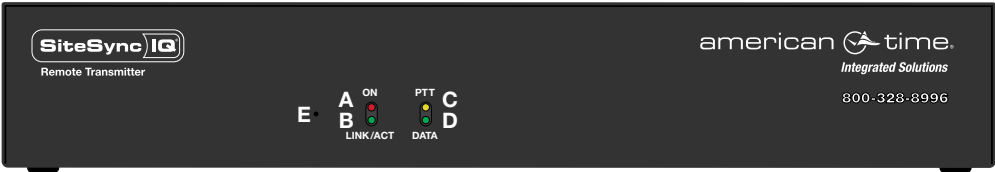
This displays the model number of the IQ Remote Transmitter.

- Model Number:

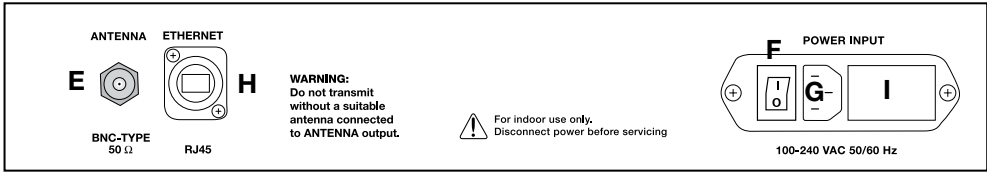
6 Call Sign:

This displays the call sign of the IQ Remote Transmitter.

- Call Sign:



Front of Remote Transmitter:
A=Remote Transmitter ON LED
B=Ethernet Link & Activity LED
C=Radio Push-to-talk LED
D=Radio Data Transmit LED
E=Reset



Back of Remote Transmitter:
E=Transmitting Antenna Port
F=Power ON/OFF Switch
G=Power Input Port
H=Ethernet RJ45 Port
I=Fuse Door

1. Battery powered clocks - Replace batteries

- Battery Booster 6 pack (6 alkaline) - replace every 3½ years
- Battery Booster 6 pack (6 lithium) - replace every 5½ years

Note: When replacing batteries, complete the following steps to properly reset the clock:

1. Disconnect barrel jack plug from wireless Receiver module.
2. Remove old batteries and replace with new batteries.
3. Connect barrel jack plug to wireless Receiver module.
4. Watch for red flashing LED.
5. Confirm red flashing LED begins flashing green within one minute of applying power.

2. Verify wireless transmission and synchronization - Quarterly

- Confirm that PTT and Data LED's are flashing on the front of the Remote Transmitter screen near the top and/or bottom of each minute. However, in Quiet Mode the TX will not appear every 30 seconds.
- Verify equipment is transmitting by resetting a clock in a known good signal area by completing the following:

Battery powered clocks:

1. Disconnect barrel jack plug from wireless Receiver module.
2. Reconnect barrel jack plug after waiting at least 5 seconds.
3. Watch for red flashing LED.
4. Confirm red flashing LED begins flashing green within one minute of applying power.

AC powered clocks:

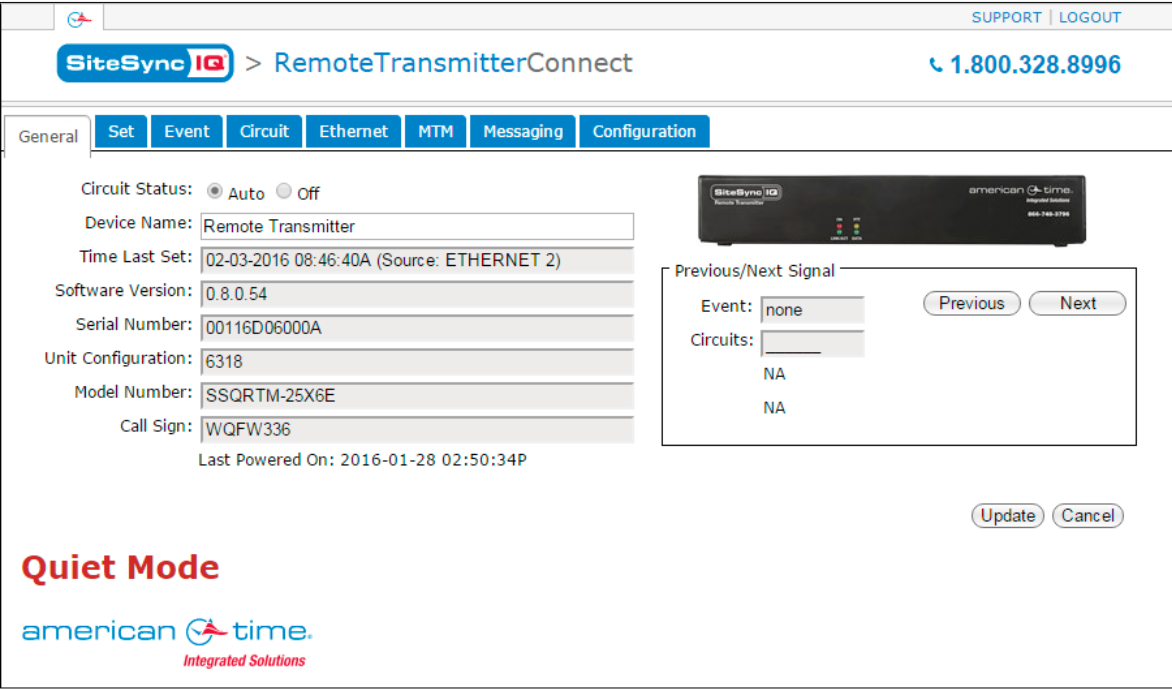
1. Press and release button on back of receiver box with power applied.
2. Watch for red flashing LED.
3. Confirm red flashing LED begins flashing green within one minute of applying power.

3. Perform service test on battery backup/surge protector as instructed by manufacturer of unit - Annually**4. Keep SiteSync IQ Remote Transmitter and clocks free from dust and debris to extend service life - Annually (or as needed)****5. Visually inspect all system components, cables, antennas, etc. - Every 6 months (or before Daylight Saving Time changes twice per year)****6. Change timekeeping CR2032 battery. Every 5 years. See page 27 for more detail.**

CAUTION: Before changing the battery, make sure to remove power cord from Remote Transmitter.

Quiet Mode is a feature that will reduce the number of transmissions of your Remote Transmitter. This will decrease the likelihood of interfering with other equipment while increasing the life of the Remote Transmitter.

If Quiet Mode is enabled (reference page 19), the Remote Transmitter will reduce the number of transmissions after 24 hours of normal operation. This will allow time to install clocks during the initial system installation. After the initial 24 hours, Quiet Mode will be designated on the General tab of Remote Transmitter Connect as follows:



After the initial 24 hours, the remote transmitter will be in Quiet Mode. This mode can be disabled by selecting disable Quiet Mode through the Configuration Menu of Remote Transmitter Connect. Please reference page 19. This will allow for installing additional clocks or changing the batteries on clocks. After installing additional clocks, or changing the batteries in the clocks, enable Quiet Mode through the Configuration Menu of Remote Transmitter Connect. However, it is not necessary to disable Quiet Mode to correct the clocks. The clocks will correct automatically between the hours of 12:00:00 AM and 6:00:00 AM if they are off time.

Analog Clock - A clock that represents time by position of hands on a dial.

CAT 5 Cable - Category 5 Cable. A twisted pair cable type designed for high signal integrity and commonly used in computer networks such as Ethernet. CAT 5 cable is used for GPS extension cables and Ethernet wiring in the SiteSync IQ Remote Transmitter.

Circuit - One of the 6 relay outputs on the SiteSync IQ Remote Transmitter.

Client - A computer or other networked device, or a software application, that connects to and request information from a server.

Contact Closure Sync - A common method of synchronizing two devices together by means of a 2-wire connection. The output device provides a synchronization time pulse once per day at a specified time by closing the connection on the 2-wires leading to the input device.

Daytime Protocol (RFC-867) - A standard, Internet-based timekeeping specification that calls for a timestamp to be sent from a timeserver as an ASCII character string containing the current date and time. This message is sent from the timeserver as a response to any input on port 13. The timeserver closes the connection as soon as the timestamp is sent. The SiteSync IQ Remote Transmitter is capable of sending and receiving timestamps via UDP port 13 using this protocol.

DHCP - The Dynamic Host Configuration Protocol (DHCP) is an auto configuration protocol used on IP networks. A DHCP server can automatically assign an IP address to the Remote Transmitter when DHCP is enabled.

Digital Clock - A clock that displays time with numerical display (12:00).

Ethernet - A very popular technology for networking computers and other devices. This communication method is used for transmitting and receiving precise timing signals by the SiteSync IQ Remote Transmitter.

Event - Programmed into the SiteSync IQ Remote Transmitter with time and date information, as well as a duration or a start/stop command. For example, Event 0001 may be programmed to execute every Monday, Wednesday and Friday at 10:00 am for 3 seconds.

FCC - Federal Communication Commission. A U.S. government agency in charge of regulating non-federal government use of radio spectrum.

Firewall - A network configuration, usually both hardware and software, that forms a fortress between networked computers within an organization and those outside the organization. It is commonly used to protect information such as e-mail and data files within a physical building or organization site.

Gateway - A network device or network point that acts as an entrance to another network, such as the server through which computers on a local area network (LAN) access the Internet.

Gateway IP Address - The address value for the Gateway device on the network (see Gateway).

GPS - Global Positioning System. A constellation of satellites operated by the United States Military (US Naval Observatory) that broadcast precisely timed signals from space. These signals are used for extremely accurate global navigation as well as the distribution of precise time.

Internet - A worldwide system of computer networks in which any one computer can get information from/or talk to any other connected computer using the TCP/IP protocols.

Leap Second - A second of time as measured by an atomic clock, added to or omitted from official timekeeping systems annually to compensate for changes in the rotation of the earth.

Low-E glass - Low Emissivity Glass. This type of glass features a unique surface coating that reduces the heat transfer through the window. Such a coating can reflect anywhere from 40% to 70% of the normally transmitted heat, while not inhibiting the amount of light that passes through the window. However, the metal oxide coating of Low-E glass does not allow the GPS signals to pass through. Thus, mounting the GPS antenna inside a window with Low-E glass is not recommended.

Master Clock - In a timekeeping or clock system, a device that acts as the source of time. The Master Clock, or Remote Transmitter, transmits the time to any number of secondary (slave) clocks.

Navigation Message - A message, transmitted by each GPS satellite, containing its orbital elements, clock behavior, system time and status messages.

Network - A group of interconnected computers or other electronic devices, capable of transferring data signals with each other.

NIST - National Institute of Standards and Technology. The Time and Frequency Division, part of NIST's Physics Laboratory, maintains the standard for frequency and time interval for the United States and provides official time to the United States. This includes traceability from the GPS timing signals to the NIST national frequency standard.

Patch Cable - A cable with plugs or terminals on each end of the conductor or conductors used to connect circuits of equipment together. Patch cables are used to connect an individual computer or other device to a network. The SiteSync IQ Remote Transmitter can be connected to an RJ-45 jack with an Ethernet Patch Cable.

RJ-45 - Registered Jack-45. An 8-pin (or 8-wire) modular connector used to attach data transmission devices to standard telephone wiring. Commonly used in Ethernet data connections and installed in the SiteSync IQ Remote Transmitter for physical connection of the Ethernet port.

Schedule - A group of events. For example, a school might program Schedule 01 with 4 events for their morning Elementary recess schedule. The SiteSync IQ Remote Transmitter allows for 99 unique schedules, with any number of events in each (up to a maximum total of 9,999 events).

Secondary Clock - Also known as a slave clock. This is a clock that synchronizes its timekeeping to that of a system master clock.

Server - A host computer or host device on a network, which shares resources and "serves" data to client computers or other servers.

Shrink Tubing - Tubing which has been extruded, cross-linked and mechanically expanded which, when reheated, will return to its original diameter. For this GPS kit, it is used to protect the electrical and communications connections from water, etc. It can be easily installed over the connectors and will shrink tightly over them after being heated.

SNTP - Simple Network Time Protocol. A less complex form of Network Time Protocol (NTP) commonly used for synchronization of computers and other devices. In SNTP, the client makes a single timing request to a single server (similar to the Daytime Protocol) and then uses this information to set its clock. This differs from NTP, which uses multiple servers and averages their results. The SiteSync IQ Remote Transmitter supports SNTP as both a client and a server.

Static IP Address - An Internet Protocol (network) address permanently assigned to an individual machine, account or user.

Subnet Mask - A number that helps to define the relationship between the host (computers, routers, switches, etc.) and the rest of the network.

Synchronization - The process of bringing two clocks or time sources into phase so their difference is zero. In the case of a timekeeping system, time synchronization takes place between the master clock and all secondary clocks.

Timeserver - A system or device that acquires the correct time from a local reference clock and/or remote timeservers and will answer time requests from other systems. See "Server" above.

Timeserver IP Address - The value of an address for a timekeeping server on the local computer network or Public Internet.

Timestamp - A time mark or notation that indicates the date and time.

UDP - User Datagram Protocol. An Ethernet protocol commonly used for time sensitive applications and which does not guarantee reliability, but does not delay packets (as in TCP-IP).

UL - Underwriters Laboratory. U.S. non-profit safety testing and certification organization.

USNO - U.S. Naval Observatory. An organization within the United States Navy which determines precise time and maintains the master clock for the United States. The USNO monitors the timing of the Global Positioning System (GPS) to provide a reliable and stable coordinated time reference for the GPS satellite navigation system.

UTC - Universal Coordinated Time. A time-scale that forms the basis of a coordinated distribution of standard frequencies and time signals throughout the world. It is often referred to as Greenwich Mean Time (GMT) or Zulu Time (military and aviation).

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