CENTRALITE

LIGHTING CONTROL SOLUTIONS

JetStream RS-232 Bridge

User's Guide

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Overview

JetStream's RS-232 Bridge is used for bridging third-party devices to JetStream's wireless mesh network as well as housing a real time astronomical clock for timed events based off a specified time or a relative time to Sunrise/Sunset. Many third-party companies have built in drivers to communicate with the RS-232 Bridge. If the company you are using has not written a driver for the system yet, don't worry. The JetStream third-party protocol is simple to use. This document will explain how to discover, capture and configure a RS-232 Bridge into a JetStream network, setup timed events, and explain the use of JetStream's third-party protocol.

Bringing the RS-232 Bridge into the Network

Discovery

Out of the box, the RS-232 Bridge is not part of any JetStream Networks. The first step in bringing the device into the network is discovery. For discovery, you will need to plug in your USB Bridge to your PC and begin the JetStream programming software. Next, find a good spot for the RS-232 Bridge to live. Preferably it needs to reside in an open area at within a 40' range of a nearby device. After plugging the RS-232 device in, the right LED will slowly blink. Once the software has read all of your current devices, click on the Discovery button at the top of the page. The system will now go into a "Discovery" mode. Once the RS-232 Bridge has been discovered, its discovery LED will go to a rapid flash and is now ready to be captured.

Capture

The Capture process will enroll the RS-232 Bridge into your specific JetStream Network. To accomplish this, tap the button on the front right side of the device after the LED is fast blinking. Once captured, the LED on the right now becomes an activity LED. You will see it flicker every once and a while. This is a normal behavior.

On the software, a dialog box will appear in which, you can name your device and place it in its correct room/floor location. Click on "Close" and the device will now show up in the device list on the left-hand side of the page.

Configuring the RS-232 Bridge for Your Area

Since the RS-232 Bridge contains an astronomical clock that tracks sunrise and sunset, the location (latitude/longitude) of the device must be provided. For US residence, a zip code can be provided and the location will automatically be determined. For non-US customers, latitude and longitude must be known prior to setting up events.

Setting the Location

In order to setup timed events, the location of the RS-232 Bridge must be programmed. In order to do this, please follow these steps:

1. Select the RS-232 Bridge in the Device List on the left hand side of the JetStream Software.
2. Click on the "Location" button in the middle of the page.
3. For US residents simply enter your zip code and the latitude/longitude will be filled in automatically. For non-US customers, leave the Zip code field blank and manually enter your latitude/longitude and time zone.
4. By default, Daylight Savings is in used. If you are in a city that does not use Daylight Savings, uncheck the "use Daylight Savings" box
5. When all is correct, click the "Submit" button.

Setting the Baud Rate

By default the RS-232 Bridge's baud rate is set to 19200. If you need to change this please follow these steps:

1. Select the RS-232 Bridge in the Device List on the left hand side of the JetStream Software.
2. Click on the "Settings" button in the middle of the page.
3. Click on the Drop down arrow next to Baud Rate and select your desired baud rate.
4. When all is correct, click the "Submit" button.

Setting Daylight Savings Parameters

By default the RS-232 Bridge's DST is set to begin on 2nd Sunday of March and end on the 1st Sunday of November. If you need to change this please follow these steps:

1. Select the RS-232 Bridge in the Device List on the left hand side of the JetStream Software.
2. Click on the "Settings" button in the middle of the page.
3. Click on the Drop down arrow next to Begin Sunday and select your desired Sunday.
4. Click on the Drop down arrow next to Begin Month and select your desired Month.
5. Click on the Drop down arrow next to End Sunday and select your desired Sunday.
6. Click on the Drop down arrow next to End Month and select your desired Month.
7. When all is correct, click the "Submit" button.

Setting the Date and Time

Before any Events can occur, the correct Date and Time need to be set on the RS-232 Bridge. To do this, please follow these steps:

1. Select the RS-232 Bridge in the Device List on the left hand side of the JetStream Software.
2. If your PC clock is correct, click on the "Clock-PC Sync" button. This will send the date and time your PC thinks it is to the RS-232 Bridge.
3. You can also set it manually by entering in the correct time and date and clicking the "Set Time" button. To check this, click the "Get Time" Button and you will see the time that is currently in the RS-232 Bridge.

Hint: Pay attention to the AM/PM values. It is important that this is correct. Or else all events will be 12 hours off.

Setting up a Timed Event

Each RS-232 Bridge allows for 50 timed events. All events will be displayed under the RS-232 Bridge in the device list in the software. To view these events, click on the "plus" sign next to the RS-232 Bridge on your device list. A timed event can either activate or deactivate a programmed scene on your JetStream System at an absolute time (9:00am) or a relative time to sunrise/sunset (10 minutes before/after sunrise/sunset).

Absolute Timed Event

A timed event can be set up to occur at a specified time of day. This is called an Absolute Timed Event. To setup an Absolute Timed Event please follow these steps:

1. Select the RS-232 Bridge in the Device List on the left hand side of the JetStream Software.
2. Expand the events by clicking on the "plus" sign next to your RS-232 Bridge.
3. Click on the event you wish to modify.
4. Name the Event (10 characters max).
5. Check the active box to set the event as being used.
6. Select the scene you wish to control from the drop down list. If you have not created the scene yet, please see the programming manual to create a scene.
7. Select whether you want the scene to be activated or deactivated. For example. You might want your outside lights scene to be activated at 7:00pm as an event and then for another event, you can have your outside lights scene be deactivated at 11:00pm.
8. Click the "Scheduling" Tab.
9. Select the Hour and Minute you would like this event to occur.
10. Select all Days of the week and Months of the year you would like this event to occur.
11. When all is correct, click the "Submit" button.

Relative Timed Event (Sunrise/Sunset)

A timed event can be set up to occur at a time of day relative to sunrise or sunset. This is called a Relative Timed Event. It is important to know that the location parameters must be setup prior to these steps. To setup a Relative Timed Event please follow these steps:

1. Select the RS-232 Bridge in the Device List on the left hand side of the JetStream Software.
2. Expand the events by clicking on the "plus" sign next to your RS-232 Bridge.
3. Click on the event you wish to modify.
4. Name the Event (10 characters max).
5. Check the active box to set the event as being used.
6. Select the scene you wish to control from the drop down list. If you have not created the scene yet, please see the programming manual to create a scene.
7. Select whether you want the scene to be activated or deactivated. For example. You might want your outside lights scene to be activated at 7:00pm as an event and then for another event, you can have your outside lights scene be deactivated at 11:00pm.

8.   Click the "Scheduling" Tab.
9.   Check the Box next to "Sunrise/Sunset"
10. Select the Hours and Minutes you would like this event to occur relative to
     sunrise/sunset.
11. Select the options for this event. This can be "Before Sunrise", "Before Sunset", "After
     Sunrise" or "After Sunset",
12. Select all Days of the week and Months of the year you would like this event to occur.
13. When all is correct, click the "Submit" button.

Testing a Timed Event

A nice feature of the RS-232 Bridge is the ability to test timed events with the click of one
button. This feature will roll the clock back to 5 seconds prior to the event occurring.
This will work with Absolute or Relative Timed Events. To test an event, please follow
these steps:

1.   Select the RS-232 Bridge in the Device List on the left hand side of the
     JetStream Software.
2.   Expand the events by clicking on the "plus" sign next to your RS-232 Bridge.
3.   Click on the event you wish to test.
4.   Make sure you can physically see the lights in the event and that they are off if the
     event is supposed to turn them on and on if the event is supposed to turn them off.
5.   Click the "Test" button on the event page.
6.   A box will appear with the time showing 5 seconds prior to the event. At the minute
     rollover, the event should fire. If successful, click "Finished". This will roll the clock
     back to your PC time.

Third Party Control

The RS-232 Bridge is used to bridge JetStream's Network to another third party (i.e. touch screens, security systems, home automation controllers). There can be a total of three RS-232 Bridges attached to the JetStream Network. These systems can then control any of the JetStream Devices with a simple ASCII protocol. This section will explain the third Party protocol.

Third Party Command Structure

If using a RS-232 Bridge, the default RS-232 connection settings for the system are:

Baud Rate:	19,200
Data Bits:	8
Parity:	None
Stop Bits:	1
Flow Control:	None

The default baud rate of each RS-232 Bridge can be changed on the "Device Details" page. Select the correct baud rate via the drop down menu on the details page. The RS-232 connectors offer a traditional three wire connection using DB9 connector. The control wire pin-out is as follows:

Description	Pin
Transmit	2
Receive	3
Ground	5

Third Party Command Control Structure

Command	Format	Description	Returns
Activate Load	^Addd	Activates device "ddd" to its preset level	Device levels in the format "DEVdddll"
Deactivate Load	^Bddd	Deactivates device "ddd"	Device levels in the format "DEVdddll"
Activate Scene	^Cnnn	Activates the scene numbered "nnn".	Device levels in the format "DEVdddll"
Deactivate Scene	^Dnnn	Deactivates the scene numbered "nnn".	Device levels in the format "DEVdddll"
Set Load to Level	^Edddllrr	Sets the load of device "ddd" to level "ll" at rate	Device levels in the format "DEVdddll"
Ask for Load Level	^Fddd	Query JetStream for the load level for device	Device levels in the format "DEVdddll"
Ask for Device Name	^Nddd	Query JetStream for the name of device "nnn"	Device name in the format "NAMxxx"
Simulate Button Tap	^Tdddbb	Simulates a button tap of device "ddd" button bb	Device button activity in the form "ACTdddbbT"
Simulate Button Press	^Pdddbb	Simulates a button tap of device "ddd" button bb.	Device button activity in the form "ACTdddbbP"
Simulate Button Release	^Rdddbb	Simulates a button release of device "ddd" button bb.	Device button activity in the form "ACTdddbbR"
Ping	Ping(CR)	Test to see if 232 Connection is good.	Response will return "Hello(CRLF)
Increment Load	inc d v r	Increments a specified load (d) by a value of v at	Device levels in the format "DEVdddll"
Decrement Load	dec d v r	Decrements a specified load (d) by a value of v at	Device levels in the format "DEVdddll"

- "nnn" is the scene number value between 001 and 100.
- "ddd" is the device number value between 001 and 096.
- "ll" is a load dim level between 00 and 99 where 00 corresponds to 0% and 99 corresponds to 100%.
- "bb" is a device button number with values between 01 and 03.
- "CR" is a carriage return
- "LF" is a line feed
- "xxx" is the third party id.

Third Party Spontaneous Output
The JetStream system has been designed to spontaneously output status for load levels and button activity. As loads change dim level they will automatically report the current dim level via the RS-232 ports. When buttons are tapped, pressed, or released their status will be reported. The following table lists the spontaneous output data.

Output	Description	Format
Device Level	Returns Current Device Level	DEVdddll
Button Tap	Returns Button Tap Event	ACTdddbbT
Button Press	Returns Button Press Event	ACTdddbbP
Button Release	Returns Button Release Event	ACTdddbbR
Scene Activated	Returns When Scene (sss) has been Activated	SCNsss1
Scene Deactivated	Returns When Scene (sss) has been Deactivated	SCNsss0

All spontaneous output strings are followed by a carriage return and line feed.

Setting Load Output Mode
Before any RS-232 Bridge will output activity in the system, it must be setup in the software. To accomplish this, you must follow these steps:

1. Select the RS-232 Bridge in the Device List on the left hand side of the JetStream Software.
2. Check the box that says "Update Third Party"
3. Once that is checked you will see a new option available on the device page.
4. Each device will now have a "Send T-Party" check box.
5. If you would like to see activity for that device, check the "Send T-Party" box.
6. Repeat these steps for each device you need to see activity from.

Factory Defaulting

To bring the RS-232 Bridge back to factory settings and to leave the current network it is attached to, you must factory default all settings. If you would like to factory default the RS-232 Bridge, please follow these steps:

1. Pull power from the RS-232 Bridge.
2. Push and hold the button on the front right.
3. While holding down the button, supply power back to the RS-232 Bridge.
4. If button is depressed while powering up, you will see the left LED rapidly flashing.
5. When the LED stops flashing, release the button.
6. The Right LED will turn on for about 5 seconds (DO NOT PULL POWER UNTIL LED STARTS SLOW BLINKING!!!)
7. When Right LED starts slow blinking, the RS-232 Bridge is back to factory settings.