CRESTRON INTEGRATION MODULE

Revision: 1.00
Date: 29 August 2024

INTRODUCTION

Ultamation's Nanoleaf Module allows a Crestron system to control Nanoleaf Shapes panels, offering control over brightness, hue, saturation, and temperature for each panel. The module also enables switching between user-defined scenes and detecting touch gestures on the panels. You can control multiple panels through the same Nanoleaf account or across different accounts.

This document is intended for Authorised Crestron Programmers and assumes you are familiar with Crestron control systems, networking, and programming.

To achieve this, you will need the following:

- A Nanoleaf account
- Nanoleaf Shapes + Controller

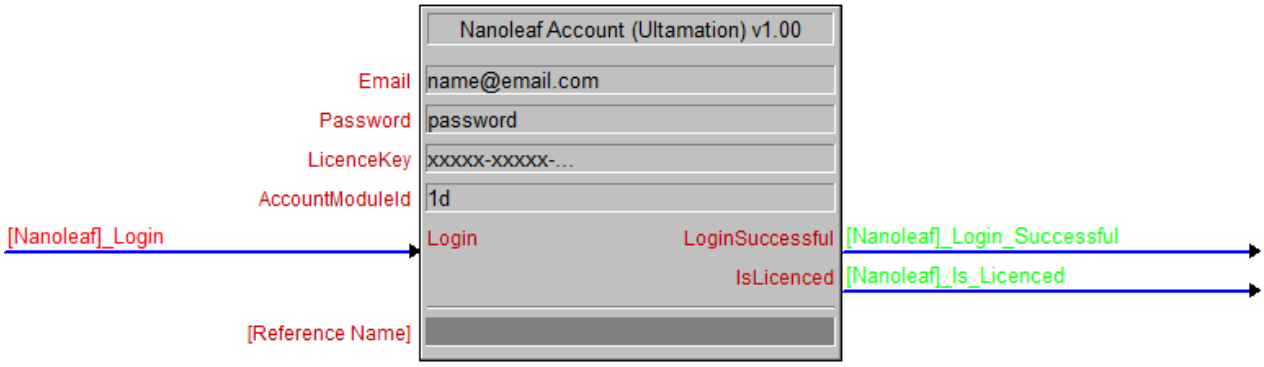
Note: This module is not compatible with 3-Series processors.

Install the Nanoleaf Shapes panels by following the instructions in the Nanoleaf user manual to install the panels. Ensure they are added to your Nanoleaf account(s) before proceeding. The controller attached to each panel contains essential networking information, including the MAC address, typically found on the back of the controller.

Download the module or example program from the Ultamation Shop. For each Nanoleaf account in your system, add a single Nanoleaf Account module. Then, for each panel you wish to control, add a corresponding Nanoleaf Panel module. Each account module has a unique ID, which must be the same across all panels linked to that account within the Nanoleaf app.

MODULE DETAILS

Nanoleaf Account



Configure the signals/parameters of the account as follows:

Email – Enter the email address of the Nanoleaf account which contains the panels you wish to control.

Password – Enter the password of the Nanoleaf account which contains the panels you wish to control.

LicenceKey – Enter the Licence Key that you will have received following purchase of the module. This licence key is associated with a specific Crestron processor's serial number and will NOT validate on a different processor. The module will work for 1 hour after processor boot with a missing or invalid a licence key. Please check the error log following a reboot to confirm the licence key validation was successful. If verification fails, you will see the following in the error log:

```
# Ultamation:NanoleafAccount - CheckLicence: Licence verification failed [xxxxx-xxxxx-...]
for MAC '00123456789A'
# Ultamation:NanoleafAccount - Initialise: Falling back to trial mode
```

AccountModuleId – Enter a unique ID to be assigned to the account module. This links shape modules to the account to send and receive API requests.

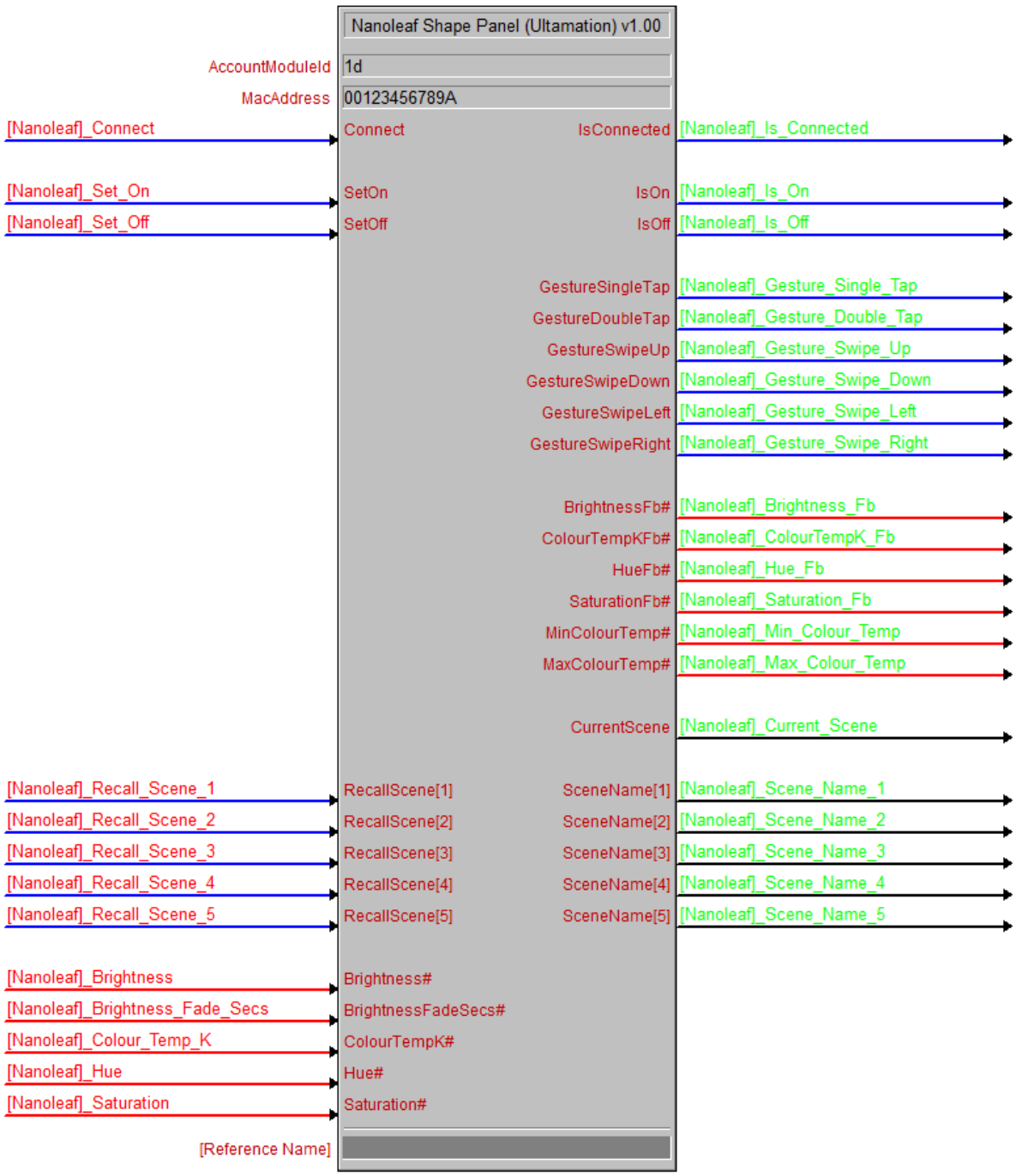
Login – This must be used during initial commissioning. It logs into the Nanoleaf API with your information to acquire the panel and handle communication to the cloud.

Note – If you login to an account after panels have already been connected, you will need to re-connect each panel linked to this account again.

LoginSuccessful – This signal will become high once the login initialisation has finished successfully. Panels cannot be connected to the account until this is shown.

IsLicenced –This signal is made high while the panel is currently licenced and for the duration of the 1-hour trial mode. This value also relates to the panel modules which are attached to this account.

Nanoleaf Panel



Note: for the purpose of this document the image only shows 5 scenes, but the module supports up to 50 as shown in the example program.

Parameters

AccountModuleId – This number must match the module for the account this panel is linked to within the Nanoleaf app.

MacAddress – The MAC address for the device, which can be typically found on the back of the shapes controller connected to the panel.

Inputs

Connect – This must be used during initial commissioning, after the account module has logged in successfully. Discrete (rising edge triggered) to connect to the account module.

SetOn – Discrete (rising edge triggered) to turn on the device. This sets the brightness to the previous level before it was turned off, otherwise a value must also be provided.

SetOff – Discrete (rising edge triggered) to turn off the device.

RecallScene[index] – Discrete (rising edge triggered) to trigger the scene at the index. The name of this scene is presented by the corresponding output *SceneName[index].*

Brightness# – Controls the intensity of light. Full scale analogue 0 – 65535 (0-100%)

BrightnessFadeSecs# –Defines the transition time between current value and the requested value, given in multiples of 1 second. i.e., a value of 5 is a 5 second fade.

ColourTempK# –Sets the light to the white colour temperature expressed in degrees Kelvin. Valid range is specified by *MinColourTemp#* and *MaxColourTemp#.* Values outside this range will be clamped. Lower values represent "warm" light and higher values represent "cold" light.

Hue#– Sets the colour hue of the light. Sets the hue to analogue degrees 0-360. On the standard hue range, 0 is Red, 120 is Green, 240 is blue and 360 is Red again.

Saturation# – Colour lights only. Sets the colour saturation of the light. Full scale analogue 0-65535 (0-100%). Where 0% is no colour (i.e., white) and 100% is full colour.

Outputs

IsConnected – Will return high when the device is connected to the Nanoleaf event stream. If this is low, the device is not communicating with Nanoleaf.

IsOn – High when device is on, and brightness is more than 0. Low when device is off.

IsOff – Low when device is on, and brightness is more than 0. Low when device is off.

GestureSingleTap – High when the panel has detected a single tap gesture.

GestureDoubleTap – High when the panel has detected a single tap gesture.

GestureSwipeUp – High when the panel has detected a swipe up gesture.

GestureSwipeDown – High when the panel has detected a swipe down gesture.

GestureSwipeLeft – High when the panel has detected a swipe left gesture.

GestureSwipeRight – High when the panel has detected a swipe right gesture.

BrightnessFb# – Provides the current intensity of the panel. Full scale analogue 0 – 65535 (0-100%).

ColourTempKFb# –Provides the current white colour temperature, expressed in degrees Kelvin. Set to 0 when the panel is set to *Hue#/Saturation#* or *RecallScene[index].*

HueFb#– Provides the current colour hue of the light. Presents hue in analogue degrees 0-360. On the standard hue range, 0 is Red, 120 is Green, 240 is blue and 360 is Red again. Set to 0 when the panel is set to *ColourTempK#* or *RecallScene[index]*.

SaturationFb# –Provides the current colour saturation of the light. Full scale analogue 0-65535 (0-100%). Where 0% is no colour (i.e., white) and 100% is full colour. Set to 0 when the panel is set to *ColourTempK#* or *RecallScene[index]*.

MinColourTemp# - The minimum supported white colour temperature, expressed in degrees Kelvin.

MaxColourTemp# - The maximum supported white colour temperature, expressed in degrees Kelvin.

CurrentScene - The name of the current scene being recalled. This is set to <empty> when the panel is set to *Hue#/Saturation# or ColourTempK#.*

SceneName[index] - The name of the scene which corresponds to the index of the input *RecallScene[index].*

Licence

This module (including software, images and any and all other associated assets distributed as part of the purchased download package) is licenced PER Processor.

A licence key is generated at the point of purchase and is linked at that time to specific information that MUST be provided at the time of purchase. A purchase should not be completed without correct information as refunds cannot be issued for errors or changes made to details following purchase.

The licence key for each processor will be delivered via email along with links to download the module. There is no physical delivery.

The module is provided without any warranty with respect to Nanoleaf platform. We will endeavour, through best efforts, to maintain the module's functionality and any bug fixes will be provided free-of-charge. Additional functionality may be released as a variation of this module and this will be a separate, purchasable, product.