

# STICK Remote Protocol

## 1 – Quick Triggering

If you just want to start a specific scenario use the following kind of packet:

Send a UDP packet to port 2430, or TCP packet (\* see end of document) to port 2431.

| Field | Name          | Size    | Description                                     |
|-------|---------------|---------|-------------------------------------------------|
| 1     | ID[8]         | 8 bytes | Array of 8 characters. Value must be “Stick_3A” |
| 2     | OpCode        | 2 bytes | Operation code. Value must be 109               |
| 3     | Scene nr.     | 2 bytes | Scene number                                    |
| 4     | Zone Sync id. | 1 byte  | For synchronising zones between controllers     |
| 5     | Command       | 1 byte  | The scene state - paused/stoped                 |
| 6     | Dimmer val.   | 2 bytes | The configured dimmer value                     |
| 7     | Speed val.    | 2 bytes | The configured Speed Value                      |
| 8     | Unused        | 1Byte   | Alignement                                      |
| 9     | Unused        | 1Byte   | Alignement                                      |
| 10    | Color val.    | 4 bytes | The configured color value                      |

Quick triggering commands:

|                  |   |
|------------------|---|
| Scene Off        | 0 |
| Scene On         | 1 |
| Scene Pause Off  | 2 |
| Scene Pause On   | 3 |
| Scene Reset      | 4 |
| Scene Dimmer Set | 5 |
| Scene Speed Set  | 6 |
| Scene Color Set  | 7 |
| Black Out Off    | 8 |
| Black Out On     | 9 |

### Example:

All the packets must be sent via TCP protocol, on the 2431 port.

To trigger a scene: Scene Number = Page Number \* 50 + SceneNumber

The maximum number of scenes per page is 50. If more than 50 scenes have been added to a page, a second page will be allocated even if it does not appear this way on the display.

For triggering scene 5 on page A (page 0):

(0x53 0x74 0x69 0x63 0x6b 0x5f 0x33 0x41) (0x6D 0x00) (0x05 0x00)(0x00)(0x01)  
(0x00 0x00)(0x00 0x00)(0x00 x00)(0x00 0x00 0x00 0x00)

For triggering scene 5 on page B (page 1 as pages are numbered from 0):

(0x53 0x74 0x69 0x63 0x6b 0x5f 0x33 0x41) (0x6D 0x00) (0x37 0x00)(0x00)(0x01)  
(0x00 0x00)(0x00 0x00)(0x00 x00)(0x00 0x00 0x00 0x00)

For setting color RGB-FFFFFF for scene 5 on page B:

(0x53 0x74 0x69 0x63 0x6b 0x5f 0x33 0x41) (0x6D 0x00) (0x37 0x00)(0x00)(0x07)  
(0x00 0x00)(0x00 0x00)(0xFF 0xFF 0xFF 0x00)

Note: to send a scene number higher than 255, set the 2nd scene byte to 0x01

## **2 – Button Simulation**

Send TCP Packet to port 2431 to trigger STICK's buttons.

| Field | Name                 | Size    | Description                                     |
|-------|----------------------|---------|-------------------------------------------------|
| 1     | ID[8]                | 8 bytes | Array of 8 characters. Value must be "Stick_3A" |
| 2     | OpCode               | 2 byte  | Operation code. Value must be 101               |
| 3     | Button_ID<br>Mask    | 1 byte  | The number of button                            |
| 4     | Button Event<br>Mask | 1 byte  | Button Event - SingleClick/Touched/Released     |
| 5     | aValue               | 2 byte  | Represents the slider's value you want to set   |

| <b>Button ID</b>    |    |                                                                                              |
|---------------------|----|----------------------------------------------------------------------------------------------|
| ButtonLeft          | 7  | Button on left side to the screen                                                            |
| Button ON_OFF       | 1  | Button to Turn on/off the device                                                             |
| Button Right        | 2  | Button on right side to the screen                                                           |
| Button UNDO         | 5  | Button to acknowledge last changes                                                           |
| Button COLORCONF    | 9  | Start <u>colorconfig</u> screen                                                              |
| Button DIMMERCONF   | 8  | Start Dimmer screen                                                                          |
| Button SPEED        | 4  | Change the speed of the current speed                                                        |
| Button SCENE        | 3  | Start scene screen                                                                           |
| Button Set          | 0  | Used in menu to set value                                                                    |
| Button Cancel       | 6  | Used in menu to cancel operation                                                             |
| Slider              | 10 | Moving slider                                                                                |
| <b>Button Event</b> |    |                                                                                              |
| Single Click        | 1  | Button Touched and released                                                                  |
| Touched             | 2  | Button Touched                                                                               |
| Released            | 3  | Button Released after touched                                                                |
| Double CLick        | 4  | Button Touched and Released Twice in defined time                                            |
| Long Touch          | 5  | Button Touched for longer defined time                                                       |
| Ultra Long          | 6  | Button Touched for long defined time, mostly used for hidden functions                       |
| Semi Touch          | 7  | Touch longer than click, but much shorter than long touch. Used by slider during sliding on. |
| No Event            | 8  |                                                                                              |

Examples:

Single Click on Scene Button datagram:

(Stick\_3A) (101) (003 001 000 000)

>>>>

(0x53 0x74 0x69 0x63 0x6b 0x5f 0x33 0x41) (0x65 0x00) (0x03 0x01 0x00 0x00)

Long Touch on Arrow Left Button datagram:

(Stick\_3A) (101) (007 005 000 000)

>>>>

(0x53 0x74 0x69 0x63 0x6b 0x5f 0x33 0x41) (0x65 0x00) (0x07 0x05 0x00 0x00)

Changing slider value to 60% datagram \*\*:

(Stick\_3A) (101) (00A 008 055 000)

>>>>

(0x53 0x74 0x69 0x63 0x6b 0x5f 0x33 0x41) (0x65 0x00) (0x0A 0x01 0x55 0x00)

### **The status message:**

As soon you will get connected to Stick3 on port 2431, the STICK will send you a status packet every 5s.

| Field | Name                   | Size     | Description                                                                                          |
|-------|------------------------|----------|------------------------------------------------------------------------------------------------------|
| 1     | ID[8]                  | 8 bytes  | Array of 8 characters. Value must be “Stick_3A”                                                      |
| 2     | OpCode                 | 1 bytes  | Operation code.                                                                                      |
| 3     | Version nr             | 1 byte   | 0x02                                                                                                 |
| 4     | Scene nr               | 2 bytes  | The number displayed on the <u>scene screen</u>                                                      |
| 5     | Scene Name[12]         | 12 bytes | The currently played scene Name 12 characters                                                        |
| 6     | Zone number            | 1 byte   | The currently <u>dispalyed</u> zone on <u>scene screen</u>                                           |
| 7     | Zone name[12]          | 12 bytes | The Currently displayed zone name                                                                    |
| 8     | Dimmer value           | 2 bytes  | The number displayed on the dimmer screen                                                            |
| 9     | Color Value R          | 1 byte   | The red value displayed on the color screen                                                          |
| 10    | Color Value G          | 1 byte   | The green value displayed on the color screen                                                        |
| 11    | Color Value B          | 1 byte   | The blue value displayed on the color screen                                                         |
| 12    | Speed Value            | 2 bytes  | The number displayed on the speed screen                                                             |
| 13    | Speed Icon Visible     | 1 byte   | indicator if speed icon is visible/have been modified                                                |
| 14    | Color Icon Visible     | 1 byte   | indicator if color icon is visible/have been modified                                                |
| 15    | Dimmer Icon Visible    | 1 byte   | indicator if dimmer icon is visible/have been modified                                               |
| 16    | Remote Clients Count   | 1 byte   | Number of connected remote clients                                                                   |
| 17    | Live Mode Is Activated | 1 byte   | Live mode is activated by <u>ethernet</u> or USB client                                              |
| 18    | Screen Current         | 1 byte   | The currently displayed screen                                                                       |
| 19    | Led Status             | 1 byte   | The current status of <u>onboard leds</u>                                                            |
| 20    | Zone Count             | 1 byte   | The current status of <u>onboard ledsCount of configured zones</u>                                   |
| 21    | Scene State            | 1 byte   | Number of configured zones The currently displayed scene state” The currently displayed scene state” |
| 22    | Is Image Displayed     | 1 byte   | The scene picture                                                                                    |
| 23    | Is Image OnFulscreen   | 1 byte   | if the scene picture is displayed in <u>fullscreen</u> mode or not                                   |

Packets must be sent to the stick via TCP on port 2431.

A maximum of 6 remote clients can be connected to one Stick\_3A device.

## \* Important : Changes to TCP Communication, Firmware v2+

If you had previously implemented TCP communication with a STICK running firmware 1.xx you may notice that updating to 2.xx prevents the STICK responding.

TCP communication now requires *authentication*. This has been implemented to allow secure communication over the Internet between a STICK and our LS Cloud Service (not yet released).

You could decide to use UDP with Quick Triggering packets from (see page 1) which has no authentication layer. If you need to use TCP packets, you have 2 options:

1. Implement TCP authentication in your software.

Ask support for the Nicolaudie Network Protocol (Remote Control) documentation and refer to the section on STICK3. This document is aimed at developers.

OR

2. Disable *Security for Cloud Access*. We advise that you choose this option only if the STICK is connected to a secure network that, ideally, is not connected to the Internet. Disabling security will allow anyone with access to the network to control the STICK without authentication. If you understand the risks, please take the steps below :

- Download latest HardwareManager (links below), connect STICK via USB & open software. PC:

<https://storage.googleapis.com/nicolaudie-eu-tools/Release/SuidiDrivers.exe>

<https://storage.googleapis.com/nicolaudie-eu-tools/Release/HardwareManager.exe>

Mac: <https://storage.googleapis.com/nicolaudie-eu-tools/Release/HardwareManager.dmg>

- Select Firmware > Beta from menu

- On Firmware Screen upgrade to latest 2.2x+ firmware.

- Go to Settings screen and uncheck 'Security for Cloud Access'. (You will only see this setting if your STICK is running Firmware 2.22+). Press *Store Settings*.

You should now be able to use the TCP Quick Trigger and Button Simulation commands.

\*\* The relationship between the slider input aValue and the output slider percentage is non-linear and not designed to give precise control. The output slider value will also be different depending on which current mode is selected. For example ...

aValue : 255/ 0xff = 200% dimmer or 600% speed

aValue : 127 / 0x7f = 100% dimmer & speed

## Byte Order

If you have a value of 0x65 with 2 bytes, do you write it 0x00 0x65 or 0x65 0x00 ? The correct answer is 0x65 0x00. This uses Big Endian (AB) encoding. You can use the tool at the following link to convert a value to 'UINT16 - Big Endian (AB)' : <https://www.scadacore.com/tools/programming-calculators/online-hex-converter/>