

Helios IP

Documentation

Content	
LIST OF TABLES	3
LIST OF FIGURES	3
<u>DOCUMENT UPDATE HISTORY</u>	4
<u>DEVICE CONNECTION</u>	5
<u>DEVICE CONFIGURATION</u>	5
API ACCESS	5
SIP ACCOUNT SETTING	7
SWITCH SETTINGS	8
DRIVER INFO	9
DRIVER HISTORY	9
HARDWARE COMPONENTS AND VERSIONS	9
HELIOS IP DRIVER CONFIGURATION	10
HELIOS IP BUS CONTROLLER	10
HELIOS IP BUS CONTROLLER SETTINGS	10
SWITCH SETTINGS	10
SUPPORTED HELIOS IP BUS CONTROLLER	11
SUPPORTED SWITCH COMMANDS	11
<u>HELIOS IP INTEGRATION TESTS</u>	12
PREPARATION OF INTEGRATION TESTS	13
NECESSARY COMPONENTS	13
DEVICE TREE CREATION	13
CENTRAL UNIT PREPARATION FOR TESTING	14
CONNECTION	14
BASIC FUNCTION TESTS	15
TCF000A DUPLICATE ADDRESS	15
TCF010A MISSING HW COMPONENT	16
TCF020A PARAMETER VALUE BEYOND RANGE	17
TRE000A CONNECTION LOSS	18
TRE010A COMMUNICATION LOSS	19
TFC010A CONTACT ACTIVATION/DEACTIVATION	20
T001 – CALL SETUP CHECK	21

List of Tables

TABLE 1: DOCUMENT UPDATE HISTORY 4
TABLE 2: DRIVER INFO 9
TABLE 3: EVENT LOGGING 9
TABLE 4: DRIVER HISTORY 9
TABLE 5: HELIOS IP BUS CONTROLLER SETTINGS 10
TABLE 6: SWITCH SETTINGS IN C4..... 10
TABLE 7: SUPPORTED HELIOS IP BUS CONTROLLER COMMANDS..... 11
TABLE 8: SUPPORTED SWITCH COMMANDS 11
TABLE 9: NECESSARY COMPONENTS 13
TABLE 10: C4 REQUISITES 13

List of Figures

FIGURE 1: HTTP API SETTINGS 5
FIGURE 2: HTTP API ACCESS SETTINGS 6
FIGURE 3: SIP ACCOUNT SETTING 7
FIGURE 4: SWITCH SETTINGS 8
FIGURE 5: BASIC TESTING DIAGRAM 14
FIGURE 6: BASIC TESTING DIAGRAM 21

Document Update History

Date	Updated by	Changes
01/07/2015	Ondřej Pohl	Document first version
31/07/2015	Ondřej Pohl	Adding of integration tests
03/08/2015	Ondřej Pohl	New driver adaptations
18/09/2015	Armen Hajrapetjan	New driver adaptations
22/10/2015	Armen Hajrapetjan	Bug fix
12/11/2015	Armen Hajrapetjan	Fix default login parameters

Table 1: Document Update History

Device Connection

The Helios IP device is connected to the Local Area Network. The intercom is supplied via PoE or an external power supply.

Device Configuration

API Access

Make basic configuration after connecting the device to the LAN. Default access values are (Login: admin, Password: 2n). The C4 - Helios IP communication runs via the intercom HTTP API. Set the API login data and enable the API functions to access this function. Go to the Services menu and select the HTTP API submenu via the Helios IP web interface. Enable the functions, select the TLS or TCP connection type and set the authentication type to None or Basic as shown in the figure below.

SERVICE	ENABLED	CONNECTION TYPE	AUTHENTICATION
System API	<input checked="" type="checkbox"/>	Secure (TLS)	None
Switch API	<input checked="" type="checkbox"/>	Secure (TLS)	None
I/O API	<input checked="" type="checkbox"/>	Secure (TLS)	None
Camera API	<input checked="" type="checkbox"/>	Secure (TLS)	None
Phone/Call API	<input checked="" type="checkbox"/>	Secure (TLS)	None
Logging API	<input checked="" type="checkbox"/>	Secure (TLS)	None

Figure 1: HTTP API Settings

Now switch the tab to Account 1 and enable the account. The HTTP API login data settings are optional and need not be completed. Select User rights in the User Settings as shown in the figure below and save the changes.

The screenshot shows the Helios IP web interface. At the top, it displays '2N Helios IP Verso' and language options: CZ | EN | DE | FR | IT | ES | RU. A 'Logout' link is in the top right. Below the header, there are tabs for 'Services', 'Account 1', 'Account 2', 'Account 3', 'Account 4', and 'Account 5'. The 'Account 1' tab is active.

On the left, a purple sidebar contains a 'Services' menu with icons for Phone, Streaming, Onvif, E-Mail, Automation, HTTP API (selected), User Sounds, Web Server, Audio Test, and SNMP.

The main content area for 'Account 1' shows:

- Account Enabled
- User Settings**
 - User Name:
 - Password:
- User Privileges**

DESCRIPTION	MONITORING	CONTROL
System Access	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phone/Call Access	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
I/O Access	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Switch Access		<input checked="" type="checkbox"/>
Camera Access	<input checked="" type="checkbox"/>	
UID (Cards & Wiegand) Access	<input checked="" type="checkbox"/>	
Keyboard access	<input checked="" type="checkbox"/>	

Figure 2: HTTP API Access Settings

SIP Account Setting

Set the SIP account in the intercom to enable outgoing calls to a defined phone number. Select Telephone in the Services menu. Refer to the figure below for an example of functional setting.

2N Helios IP Verso CZ | EN | DE | FR | IT | ES | RU Logout

SIP 1 SIP 2 Calls Audio Video 2N Indoor Touch

Services

- Phone >
- Streaming
- Onvif
- E-Mail
- Automation
- HTTP API
- User Sounds
- Web Server
- Audio Test
- SNMP

Intercom Identity ▾

- Display Name 2N Helios IP Verso
- Phone Number (ID) 520
- Domain 10.0.25.74

Authentication ▾

- Use Authentication ID
- Authentication ID 520
- Password

SIP Proxy ▾

- Proxy Address 10.0.25.74
- Proxy Port 5080

SIP Registrar ▾

- Registration Enabled
- Registrar Address 10.0.25.74
- Registrar Port 5080
- Registration Expires 120 [s]

Figure 3: SIP Account Setting

Switch Settings

Set the Helios IP switch controlling parameters as shown in the figure below.

2N Helios IP Verso CZ | EN | DE | FR | IT | ES | RU Logout

Hardware

Switch 1 Switch 2 Switch 3 Switch 4 Advanced

Switch Enabled

Basic Settings ▾

Switch Mode Monostable ▾

Switch-On Duration 5 [s]

Time Profile [not used] ▾

Distinguish on/off codes

Output Settings ▾

Controlled Output Relay 1 ▾

Output Type Normal ▾

Switch Codes ▾

	CODE	ACCESSIBILITY	TIME PROFILE
1	00	Keypad, DTMF ▾	[not used] ▾
2		Keypad, DTMF ▾	[not used] ▾

Extended Activation ▸

State Signalling ▸

Figure 4: Switch Settings

Refer to the following product support web sites for more Helios IP configuration details:

<https://wiki.2n.cz/pages/viewpage.action?pageId=23102595>

Driver Info

Function	
Communication reinitialisation, run and stop	✓
Event download from device	✓
Outgoing call to defined number	✓
Outgoing call hang-up	✓
Switch control	✓

Table 2: Driver Info

The driver allows you to log the following events in the device:

Event	
Switch state change	✓
Card tapping on card reader	✓
Device state	✓
Audio loop test result	✓
Call state change	✓

Table 3: Event Logging

Driver History

Date	Version	Description
01/07/2015	1.0.1	Driver first version
31/07/2015	1.0.2	Compatibility with integration tests
03/08/2015	1.0.3	Additional test compatibility
18/09/2015	1.0.4	Adjusted for the new API
22/10/2015	1.0.5	Bug fix
12/11/2015	1.0.9	Bug fix

Table 4: Driver History

Hardware Components and Versions

Supported firmware version: **2.13**

Helios IP Driver Configuration

Helios IP Bus Controller

Information on Helios IP Bus Controller and switch features and configurable values.

Helios IP Bus Controller Settings

Feature name	Meaning	Default value	Example of value
Enabled	Driver enable/disable	Yes	
Mobile number	Phone number for outgoing calls		550
Password	Helios IP HTTP API access password		2n
URL	Helios IP address		https://192.168.1.2
Account	Helios IP HTTP API access user name		admin
Location	Device location		Front door

Table 5: Helios IP Bus Controller Settings

Switch Settings

Feature name	Meaning	Default value	Example of value
Digital Output ID	Switch ID [1 - 4] for activation		1
Location	Switch location		Front door
Video camera			

Table 6: Switch Settings in C4

Information on Helios IP Bus Controller and switch commands.

Supported Helios IP Bus Controller

Element	Command	Meaning
Command	Reinitialisation	Reinitialise communication with the device after changes.
	Run	Run communication with the device.
	Stop	Stop communication with the device.
	Close	Close the outgoing call.
	Call	Start an outgoing call to a defined number.

Table 7: Supported Helios IP Bus Controller Commands

Just one Helios IP switch can be controlled via the driver.

Supported Switch Commands

Element	Command	Meaning
Delete		Remove a switch from the list.
Command	ON	Activate the selected switch.
	OFF	Deactivate the selected switch.

Table 8: Supported Switch Commands

HELIOS IP INTEGRATION TESTS

Preparation of Integration Tests

Necessary Components

The integration tests require the following components:

Component	Count of components
Device with a web browser and LAN access	1 or more
Helios IP intercom	1
Ethernet cables	4 or more
External power supply for Helios IP if no PoE is available	1
Sip Proxy	1
IP phone	1

Table 9: Necessary Components

The following items are required for Central Unit running, management and configuration:

Item	Count of items
C4 installation	1
C4 User Manual	1
This documentation	1

Table 10: C4 Requisites

Device Tree Creation

1. Create a bus controller with device URL and Account and Password values set according to the Helios IP HTTP API login data.
2. Create an output under the bus controller with ID as set for the Helios IP switch.

Central Unit Preparation for Testing

Connection

Connect the Central Unit and Helios IP as shown in the diagram below.

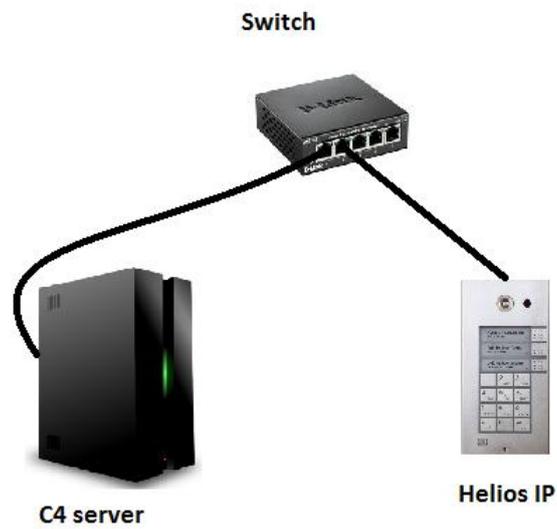


Figure 5: Basic Testing Diagram

Basic Function Tests

TCF000A Duplicated Addresses

The test verifies the presence of a switch with duplicate identifier.

Test Procedure

1. Stop Helios PI using the Stop button.
2. Create two switches in the device.
3. Set identical Digital Output IDs for the two switches.
4. Start the Helios IP driver using the Reinitialisation button.

Expected Results

1. The two switches pass into the ConfigurationFailure status.
2. The driver is not initialised and stops.
3. The following record appears in the log:

At 'DEVICE1' and 'DEVICE2' nodes of 'DRIVER' a duplicate address 'ADDRVALUE' was detected.

Where

- DEVICE1 a DEVICE2 represent the names of the duplicate switches.
- DRIVER represents the device name.
- ADDRVALUE is the switch ID.

TCF010A Missing HW Item

The test verifies the driver in case the device configuration is incomplete. In this case, the driver has to log the Missing Device event on the nearest superior level of the device configuration tree after every event receipt.

Note

The test is not supported due to communication protocol limitations.

TCF020A Property Value Out Of Range

The test verifies configuration containing a value beyond the allowed range. The test verifies whether the driver is able to detect this error at initialisation.

Test Procedure

1. Stop the driver if running.
2. Add a driver with an ID higher than that of Helios IP.
3. Run the device.

Expected Results

1. The driver is not initialised and stops.
2. The driver with a wrong ID passes into the ConfigurationFailure state.
3. The following event is recorded in the log:

Invalid property value 'VALUE' on 'DEVICE'.

Where

- VALUE is the wrong ID value.
- DEVICE represents the device name.

TRE000A Connection Lost

The test verifies connection loss between the C4 server and the device.

Test Procedure

1. Run the device driver and wait for connection.
2. Disconnect the cable from the router/switch making sure that the Windows still detects Ethernet connection.
3. Wait for connection loss detection.
4. Reconnect the cable.
5. Wait for communication recovery.

Expected Results

1. The following events are recorded in the log:

```
Connection lost to 'DEVICE'.
```

```
Connection with 'DEVICE' restored. Number of attempts: RETRYCOUNT.
```

Where

- DEVICE represents the device name.

TRE010A Communication Lost

The test verifies the driver if communication gets lost between the LAN module and device - there is no disconnection on the transport layer.

Note

The test is not supported due to communication protocol limitations.

TFC010A Contact Activation and Deactivation

The test verifies the input/output contact control and monitoring.

Test Procedure

1. Click ON on the switch.
2. When the contact is activated, click OFF on the switch.

Expected Results

1. When the switch is activated, its state is marked Open.
2. When the switch is deactivated, its state is marked Normal.
3. The following events are recorded in the log:

Command 'On' send to 'DEVICE' by 'PERSON'.
'DEVICE' opened.
Command 'Off' send to 'DEVICE' by 'PERSON'.
'DEVICE' closed.

Where

- DEVICE is the switch name.
- PERSON represents the command entering person.

T001 – Call Setup Check

The test verifies an outgoing call setup. Extend the basic configuration with a SIP Proxy and IP phone as shown in the figure below to verify the function.

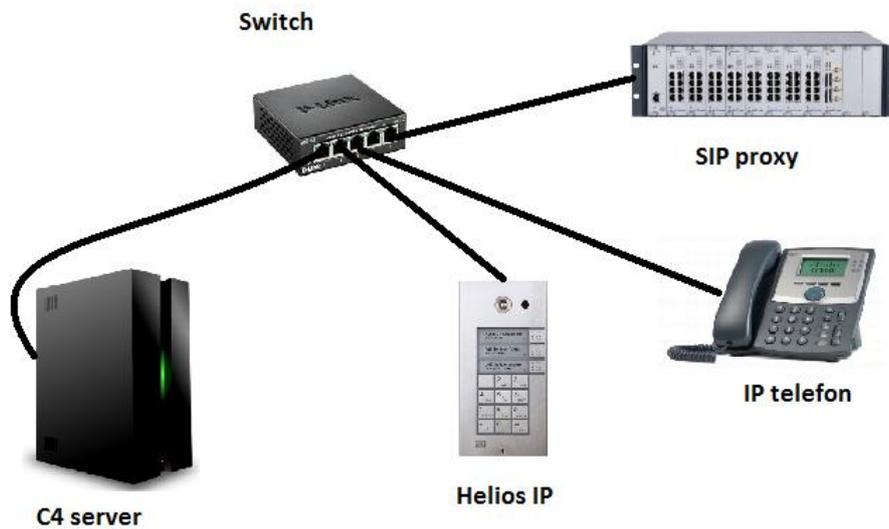


Figure 6: Basic Testing Diagram

Initial Conditions

- Running C4 server,
- Set SIP Proxy and IP phone,
- Correctly configured Helios IP,
- Helios IP added to C4 with a properly set driver and defined phone number.

Test Procedure

- 1) Start device state monitoring.
- 2) Start the Call command in the device context menu.
- 3) Receive the call and verify audibility via a SIP phone.
- 4) Hang up the call using the Close command in the context menu.

Expected Results

An outgoing call is set up from Helios IP to a defined phone number. The call is set up successfully with mutual audibility. When the Close command is executed, the call is terminated. You can see the following information on the Events tab:

⚠	01/07/2015 12:37:07	Technical event in 'hip'. Description: Event call direction (Outgoing) changed state to (Terminated)
⚠	01/07/2015 12:37:05	Technical event in 'hip'. Description: Event call direction (Outgoing) changed state to (Connected)
⚠	01/07/2015 12:37:02	Technical event in 'hip'. Description: Event call direction (Outgoing) changed state to (Ringing)
⚠	01/07/2015 12:37:02	Technical event in 'hip'. Description: Event call direction (Outgoing) changed state to (Ringing)
⚠	01/07/2015 12:37:02	Technical event in 'hip'. Description: Start call on 550
ⓘ	01/07/2015 12:37:01	Command 'Call' send to 'hip' by 'Support (Root)'.