NIA-1

Network Interface Adapter

USER MANUAL

October 2025 • 1.0 • English

Disclaimer

Before using the product, be sure to read and understand all respective instructions.

The product is available for commercial customers only.

For product specification changes since this document was published, refer to the latest publications of ARRI data sheets or data books, etc., for the most up-to-date specifications.

Not all products and / or types are available in every country. Please check with an ARRI sales representative for availability and additional information.

The information given in this document is subject to change without notice.

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Imprint

Original version.

Initial Language

The initial language of this operating manual is English. Operating manuals in other languages are translations from English.

In the event of conflict between the respective languages (i.e. if any translation(s) of present document has/have been prepared for convenience or any other purpose), with regards to the meaning or interpretation of a word or an instruction etc., the contents and provisions of the English language version shall prevail.

For Further Assistance

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Table of Contents

1 About this Document

This operating manual is for everyone who uses the device. It gives directions on how to operate the device safe and as intended. Read the operating manual before you use the device for the first time to make sure that the use is safe and correct.

This operating manual is an important part of the device. It shall be easily accessible and near to the device so that users can use it anytime as a reference.

The user manual contains more detailed information about the features and functionalities of the device. Please visit the website www.arri.com to download the user manual.

Keep the operating manual, the user manual and all other operating and assembly instructions for the device in a safe area for future reference and possible subsequent owners.

Document Revision History

Document ID: D45 1000 9000

Version	Release	Date	Note
1.0	F08474	October 2025	First Release

1.1 Product Information Resources

The ARRI documentation portal provides important documents on the product for free download.

Please enter the following searchkeys in the search bar to retrieve the documents for the product:

NIA-1, K2.0052389

ARRI documentation portal

For more details about the product, please refer to the ARRI website at:

NIA-1 product page

1.2 How to use this Manual

All directions are given from an operators point of view. For example, device right side refers to the right side of the device when standing behind the device and operating it in a usual way.

Connectors are written in all capital letters, for example "USB connector".

Buttons are written in italic typeface capital letters, for example "*PLAY* button".

Menu paths are written in italic typeface, with menu and home in capital letters, for example *"MENU > Display Orientation > Normal"*.

2 Introduction

2.1 Network Interface Adapter NIA-1

The ARRI Network Interface Adapter NIA-1 is an intelligent Protocol Gateway between classical LBUS connections and standard IP networks.

The NIA-1 is designed to interconnect LBUS and LCS devices over IP networks or to connect LBUS and LCS devices to IP-based camera connections.

The user interface includes a touch screen with status information and quick setup possibilities.

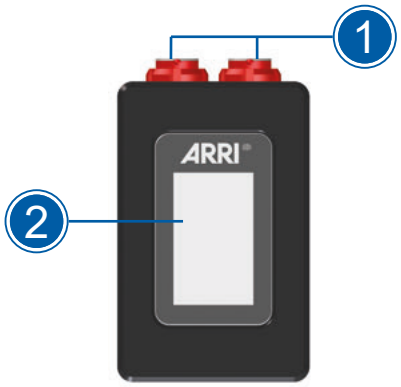
Using the LBUS interface, the system can connect existing LBUS devices, while the Ethernet port can connect to standard IP networks and cameras with IP interface. For a simple setup, a single Ethernet cable can connect two NIA-1 devices without additional IP equipment.

Key Features

- Support for ARRI, Sony BURANO and Blackmagic URSA Cine camera control
- Integrated touchscreen for direct operation
- Web-based interface for advanced configuration
- Parallel multi-cluster operation via network channels
- Tunnel for LBUS and FSCAN for simple 1:1 signal extension over IP
- Firmware updates via USB or Web UI

3 Product Overview

Front and Top Side



1	LBUS Port
2	Touch Screen

LBUS Port (4-pin LEMO)

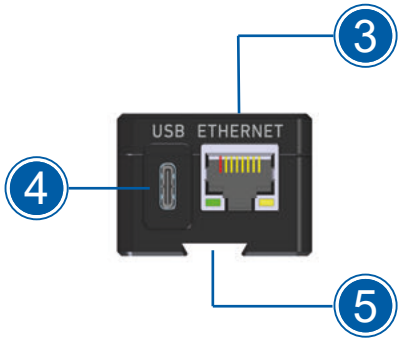
LBUS is a bus standard designed to allow multiple lens motors and control devices to communicate with each other. The NIA-1 has two bidirectional LBUS interfaces for receiving and distributing power, as well as providing and receiving control signals to, for example, cforce motors, ARRI hand-units (Hi-5 & Hi-5 SX), and ARRI cameras (ALEXA series).

LBUS 1: Left port (as viewed from the display).
LBUS 2: Right port (as viewed from the display.

Touch Screen

Shows status information and allows direct configuration.

Bottom Side



3	Ethernet Port
4	USB-C Port
5	Dovetail

Ethernet Port (RJ45)

Ethernet is a widely used networking technology that connects devices in a local area network using a cabled or wireless connection, thus enabling them to exchange data at high speed.

The port is a standard 8-pin RJ45 port and allows a reliable, high-speed (100Mbit/s) Ethernet connection for easy network integration and data transfer.

USB-C Port

The USB-C port can be used to easily connect peripherals such as data sticks, network adapters, and others.

The port can also be used to power the NIA-1 itself. Please note: when powered via USB-C, the device does not supply power to connected devices through the LBUS ports.

The following network adapters (USB-C to Ethernet) are supported by the NIA-1:

- Realtek RTL8153
- Dell D59GG (DBQBCBC064)

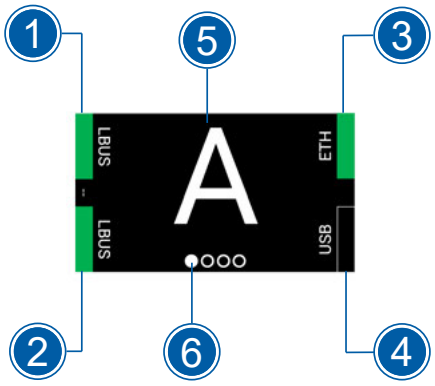
Dovetail

For mounting accessories.

4 Menu Operation

4.1 Control Panel

The NIA-1 features a graphical user interface to configure the system. The display shows menu and status information and can be controlled by touching the display.



1 LBUS 1 status
2 LBUS 2 status
3 Ethernet status
4 USB status
5 Information (depending on the selected Home Screen)
6 Home Screen indicators

4.2 Home Screen 1 - Network Channel

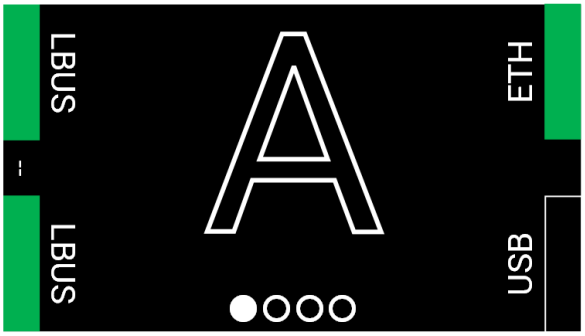
At this screen, the currently selected Network Channel is displayed. All NIA-1 devices with the same Network Channel selected communicate with each other.

In case the selected Network Channel is not set, the following screen will be shown:

HINT

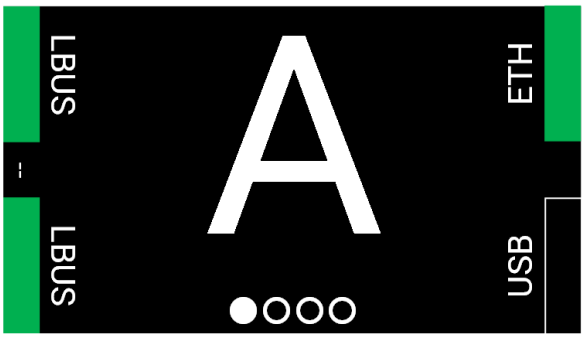
The following symbol indicates that you can access the menu by double-tapping.

After having set the Network Channel, the following screen will be shown (e.g., Network Channel “A”):



The outlined Network Channel symbol indicates that the channel is set, but no connection is established over the Ethernet port to at least one NIA-1 with an identical Network Channel.

Once the NIA-1 has established a stable connection to a different NIA-1, the Network Channel symbol will change from outlined to solid.



4.3 Home Screen 2 - Camera Selection

In case a third-party camera is connected and shall be controlled with a Hi-5 or Hi-5 SX hand unit, the camera can be selected on this page.

NOTICE

The hand unit needs a license to control a third-party camera

The following third-party cameras are currently supported by the NIA-1 via a Hi-5 license:

- Sony BURANO
- Blackmagic URSA Cine

For detailed setup descriptions, refer to the chapter Sample Configuration below.

HINT

Special camera-dependent settings can only be done via the Web UI.

4.4 Home Screen 3 - Network Information

On the Network Information page, the IP Address information is shown:

Double-tap to enter the *Network Settings* menu. The following modes are available:

DHCP (includes Auto IP)

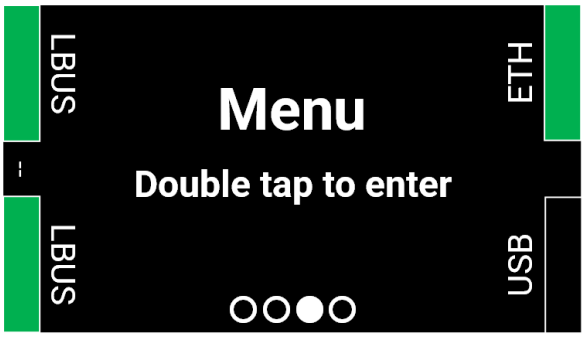
If this mode is selected (default), the NIA-1 tries to receive an IP Address from a DHCP server in the network. If no DHCP server is present, the NIA-1 will default to its Auto IP Address. This technique is used to connect two NIA-1s directly, without the need of additional network equipment.

Static IP

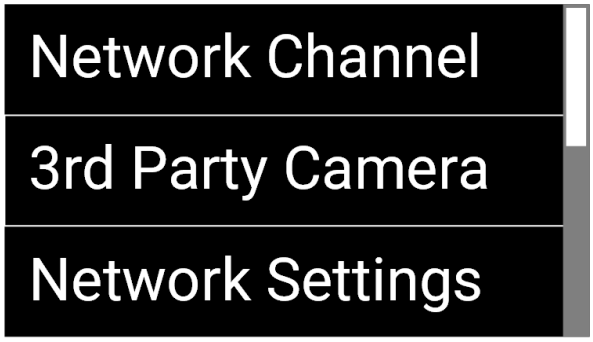
The IP Address, Subnet Mask, and Gateway Address can be selected manually.

4.5 Home Screen 4 - Menu

This page is to enter the NIA-1 settings.



The menu is hierarchically arranged. To enter the next level or to go further, swipe from right to left. To go one level back or cancel, swipe from left to right.

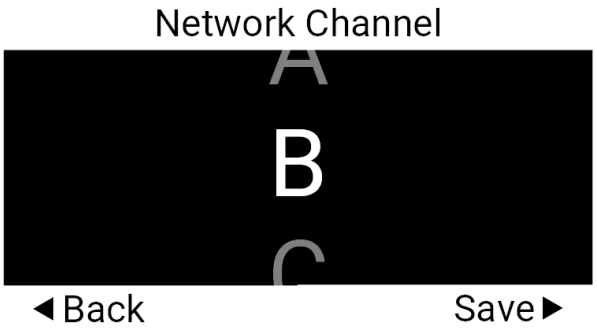


The menu structure is as follows:

4.5.1 Network Channel

Setting of the Network Channel. The selection can be either:

- - (default): No communication with another NIA-1 possible
- A-Z: Communication with all NIA-1 devices with the same Network Channel set



4.5.2 3rd Party Camera

Selection of a connected third-party camera. The camera can be one of the following:

- None (default)
- Sony BURANO
- Blackmagic URSA Cine

After selecting a third-party camera, a page with the camera’s access information is displayed.

4.5.3 Network Settings

The following address modes are provided:

- DHCP
- Static IP

When selecting static IP the following information must be set manually:

- IP Address of this NIA-1
- Netmask
- Gateway (optional)

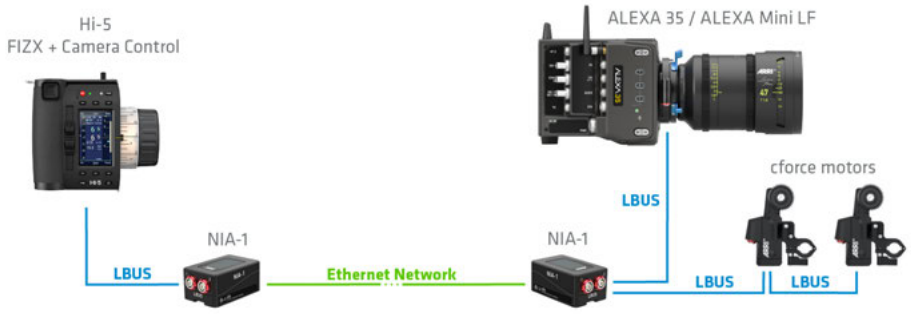
4.5.4 ECS Port Mode

Each LBUS connector can have one of the following modes:

- LBUS
- LBUS Tunnel
- FSCAN Tunnel

LBUS

This is the default mode. All connected LBUS devices in the same network channel can communicate with each other.



LBUS Tunnel

LBUS Tunnel mode provides two independent LBUS chains on a single pair of NIA-1 with an existing Ethernet connection. In this case LBUS 1 on one unit communicates exclusively with LBUS 1 on the second unit and accordingly LBUS 2 only with LBUS 2 on both units. There is no communication possible between LBUS 1 and LBUS 2 in this case. This allows to connect two cameras to one NIA-1 and have them each be controlled by a respective Hi-5.

This setting must be selected on both units.

FSCAN Tunnel

This is a special mode, where two NIA-1 devices tunnel all FSCAN traffic from one LBUS port to the LBUS port of the other NIA-1 device.

This enables the possibility to use a pair of Network Interface Adapter NIA-1 devices to transport LBUS and FSCAN messages over an existing Ethernet cable or existing IP infrastructure, e.g., LBUS from LBUS 1 to LBUS 1 and FSCAN from LBUS 2 to LBUS 2.

4.5.5 Display Settings

In this submenu, the display orientation, the display brightness, and the time to switch the display off can be selected.

Display Orientation

The default setting is AUTO. In this mode, the display orientation adjusts automatically to ensure optimal readability.

In case a static orientation is required, following orientations can be selected:

0° rotation (LBUS ports left)

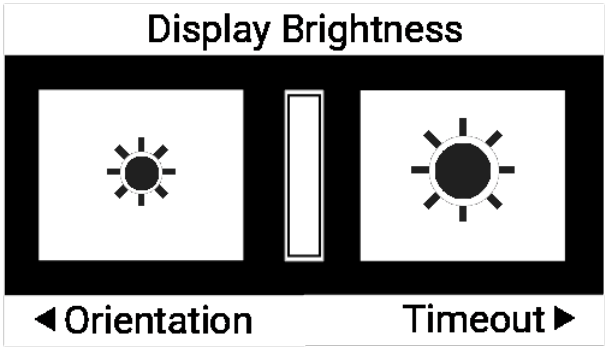
90° rotation (LBUS ports on top)

180° rotation (LBUS ports right)

270° rotation (LBUS ports showing down)

Display Brightness

The brightness can be increased or decreased with 2 buttons.



Backlight Timeout

The backlight timeout defines the duration until the display is switched off automatically if no user interaction is recognized.

Possible values are:

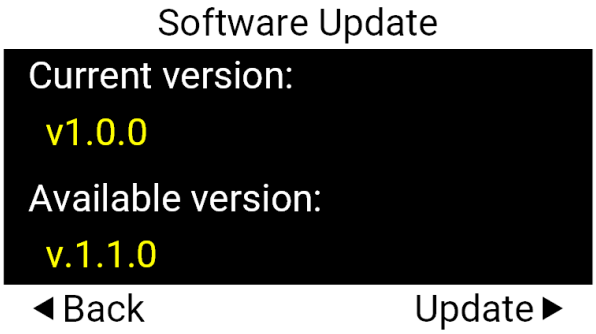
- OFF: The display will stay on permanently
- 5s to 30s: The display will automatically switch off after this selected time

4.5.6 Software Update

To update the NIA-1 software to the latest version, the Software Update package must be copied to a USB drive into the following folder:

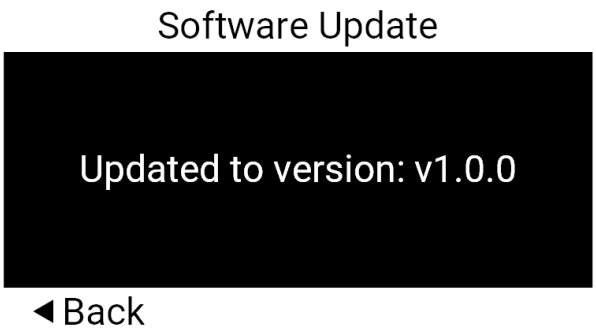
ARRI/NIA-1/SUP

Once the USB drive is connected and a valid update package is present, the menu will show the current and available software version.



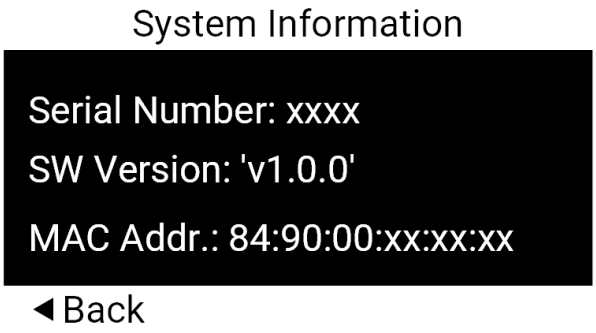
Swiping from left to right initiates the update process.

After the software update is finished, a confirmation screen is shown.

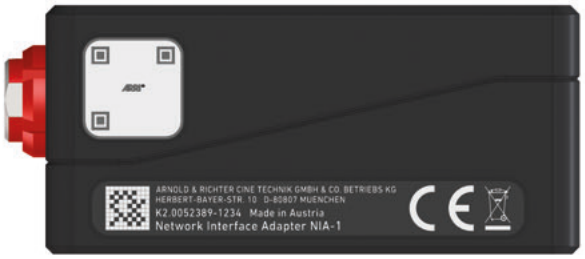


4.5.7 System Information

This page shows some important system information of the device.

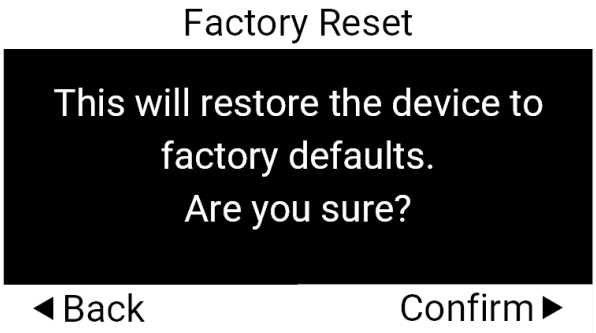


The Serial number in this screen is identical to the one on the device label. It is a four-digit number after the K2 identifier (e.g., 1234).



4.5.8 Factory Reset

To reset the NIA-1 to its factory default settings, enter this menu and swipe from right to left to confirm your choice. The NIA-1 will reboot after this operation.



4.6 Web UI

To enter the Web UI from the browser, enter the IP Address or the mDNS name in the address bar of your browser.

mDNS Name

The browser will establish a connection to the NIA-1 with the following request:
http://nia1-<serial number>.local

The serial number can be read out via the System Information menu or is printed on the side label of the device. For example, a NIA-1 with serial number 1234 can be accessed in the local network with:
http://nia1-1234.local

IP Address of the Ethernet Port

The IP address of the Ethernet port can be found on the Home Screen 3 - Network Information.

IP Address for direct USB-C Connection

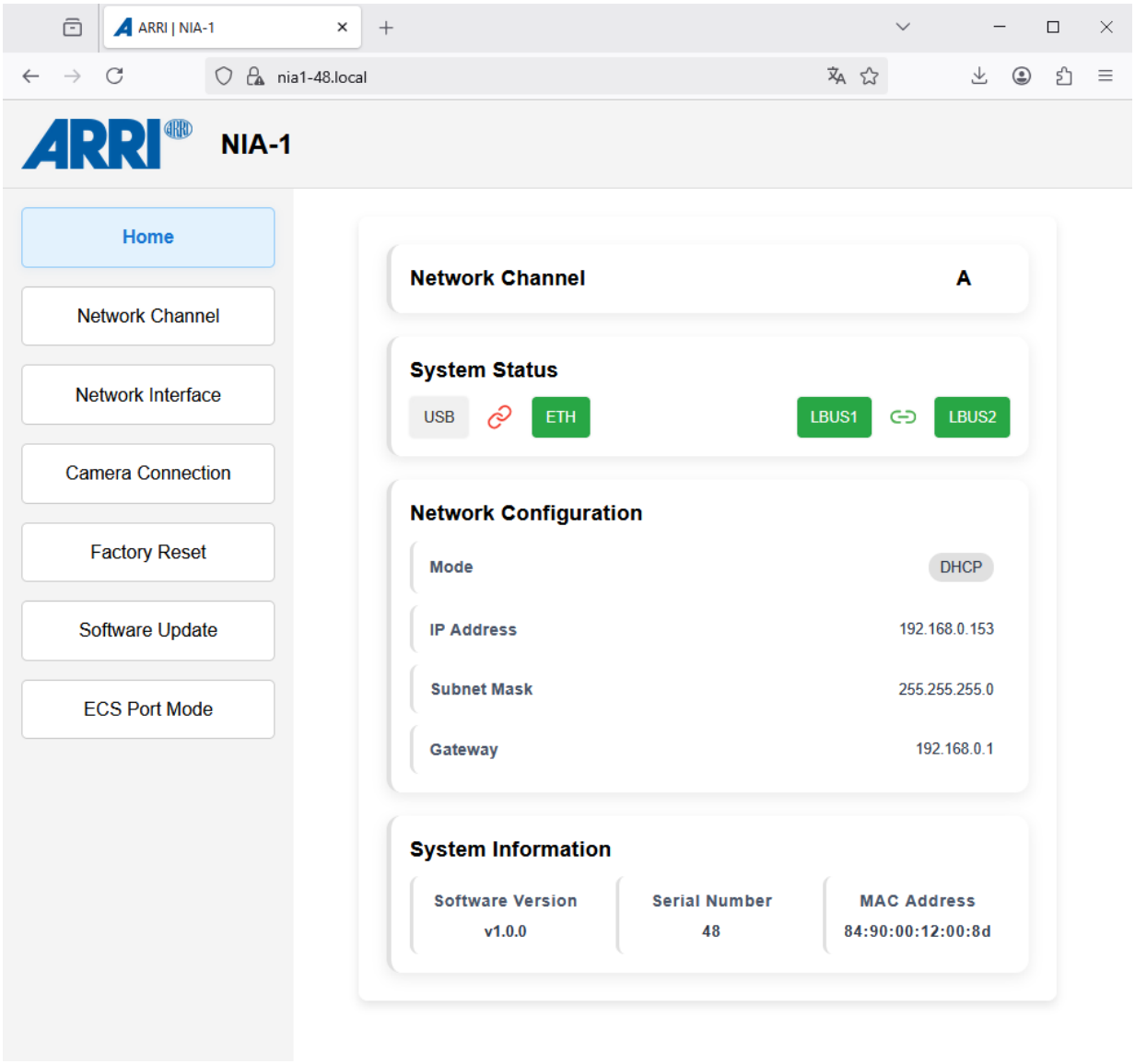
If the Network Interface Adapter NIA-1 is directly connected to a PC or tablet over the USB-C port, the address to be used is **10.99.99.1**.

NOTICE

An iPhone 15 and above can be directly connected to the USB-C port of the NIA-1 for configuration over the Safari (or other) browser.

Home Screen

The first page displayed is the Web UI homepage.



Home

Provides an overview of the NIA-1, similar to the device UI homepage on the display.

Network Channel

Selection of the Network Channel.

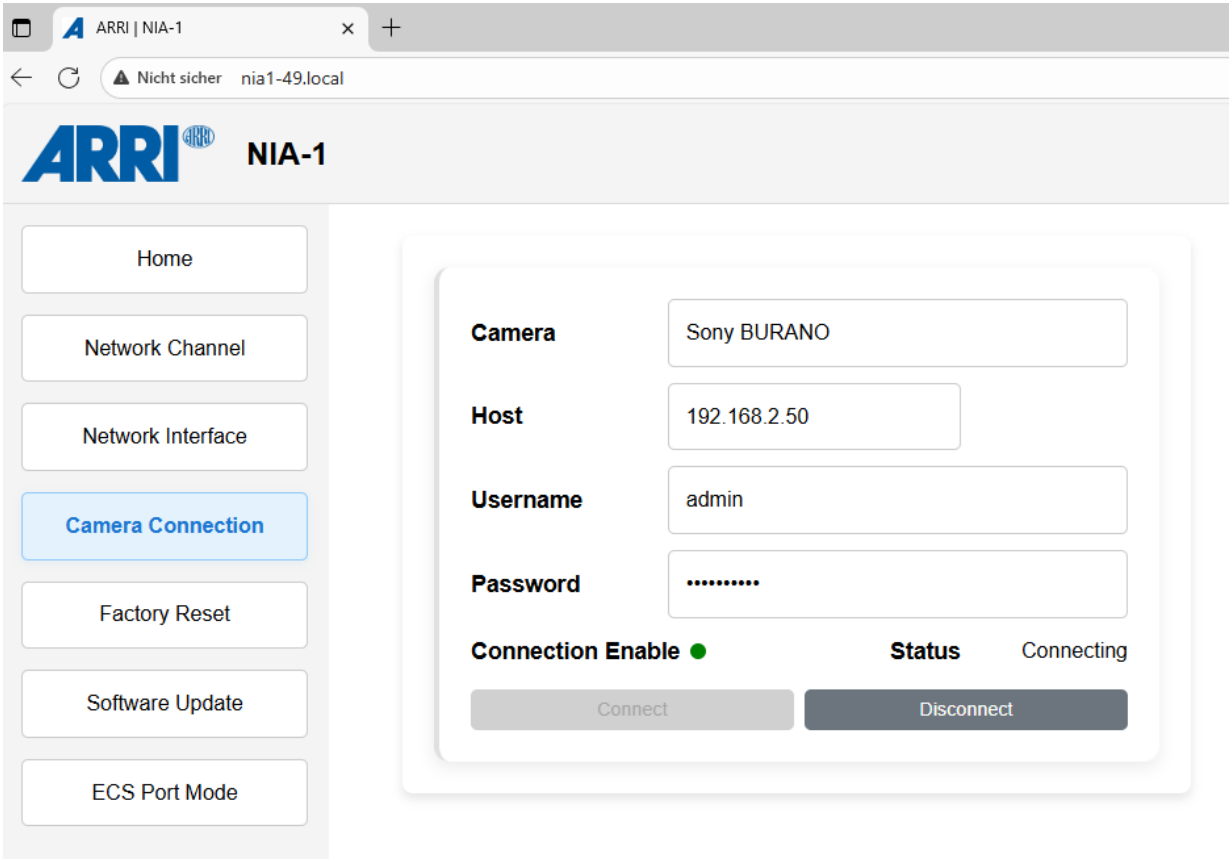
Network Interface

Settings of the IP Mode and the corresponding parameters.

Camera Connection

For third-party camera only.

Depending on the connected camera, different settings are necessary. The accessible settings are Camera, Hostname or IP Address, Username, and Password. These settings can only be adjusted in the Web UI.



Factory Reset

Perform a reset to the factory default values.

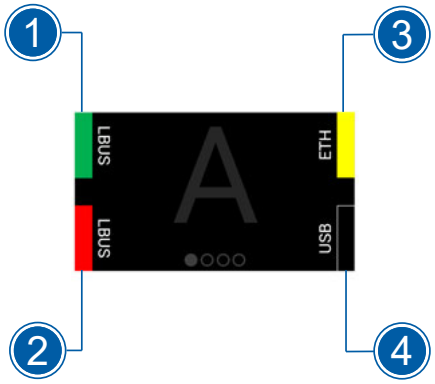
Software Update

Choose a software image (raucb file) for NIA-1 and initiate the update process.

ECS Port Mode

Selection of the port mode for each LBUS connector (see ECS Port Mode in the Control Panel section above).

4.7 Port Status Indication



1 LBUS 1 port status indicator
2 LBUS 2 port status indicator
3 Ethernet port status indicator
4 USB port status indicator

No Color

Nothing is connected to the port.

Green Color

The port is in use, and communication is fully functional.

Yellow Color

The port is in use, but a problem exists with the port or one of the connected devices. The communication is not 100% functional. Check the setup of the port and of the connected devices.

Red Color

The port is in use, but a severe failure exists with the port or one of the connected devices. The port cannot be used as intended. Check the port and the connected devices.

4.8 Bridging Status Indication

1 Bridging status indicator of LBUS 1 and LBUS 2 port
2 Bridging status indicator of Ethernet and USB-C port

LBUS 1 and LBUS 2

-- If LBUS 1 and LBUS 2 port are both set to LBUS mode, all LBUS messages will be forwarded from LBUS 1 to LBUS 2 and vice versa.

-/- If LBUS 1 or LBUS 2 (or both) are set to LBUS Tunnel or FSCAN Tunnel mode, messages will not be forwarded from LBUS 1 to LBUS 2 and vice versa.

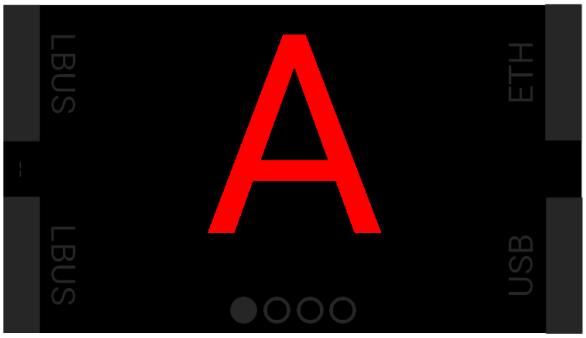
Ethernet and USB-C

-- If a USB-C to Ethernet adapter is connected to the USB-C port, the NIA-1 functions as a switch, forwarding network traffic between its built-in Ethernet port and the Ethernet port of the adapter

empty	If no USB-C to Ethernet converter is plugged into the USB-C port, the NIA-1 will not show any forwarding information.

4.9 Network Status Indication

In case of an error within the Network Channel, the network channel symbol will change its color to red. Check the settings of the LBUS Port Modes on all NIA-1 devices.



HINT

Connecting more than two NIA-1 devices to the same LBUS or FSCAN tunnel will cause an error.

5 Compatibility and Sample Configuration

5.1 Compatibility

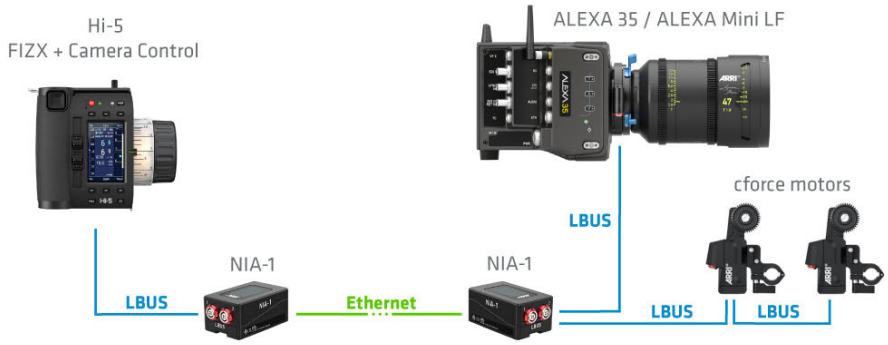
The NIA-1 is compatible with the following products and firmware versions:

Products	Firmware Version
Hi-5 & Hi-5 SX	3.2 and later
ZMU-4	1.4 and later
RIA-1	2.4 and later
cforce mini RF	2.4 and later
Master Grip	2.0.2 and later
OCU-1	2.0.2 and later
LCUBE CUB-1	3.1 and later
cforce mini	2.0 and later
cforce plus	2.0 and later
ALEXA 35 (Classic & Xtreme)	5.1.0 and later
Sony BURANO	2.01 and later
Blackmagic URSA Cine	9.2.2 and later
ALEXA Mini	Update to the latest firmware
ALEXA Mini LF	Update to the latest firmware
UDM-1	Update to the latest firmware
SXU-1	Update to the latest firmware
WCU-4	Update to the latest firmware
Focusbug CineRT	Update to the latest firmware
cmotion Cinefade VariND	Update to the latest firmware

5.2 Sample Configurations

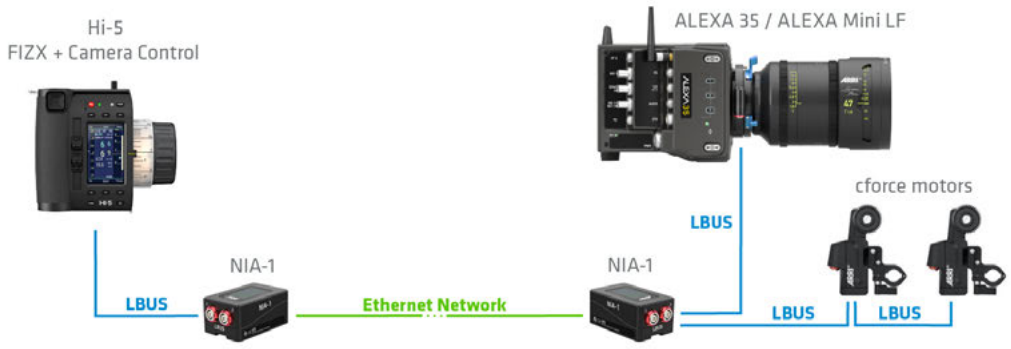
The NIA-1 can be used in different applications within the ARRI Ecosystem. The following configurations are examples and not complete:

NIA-1 as Range Extender without IP infrastructure

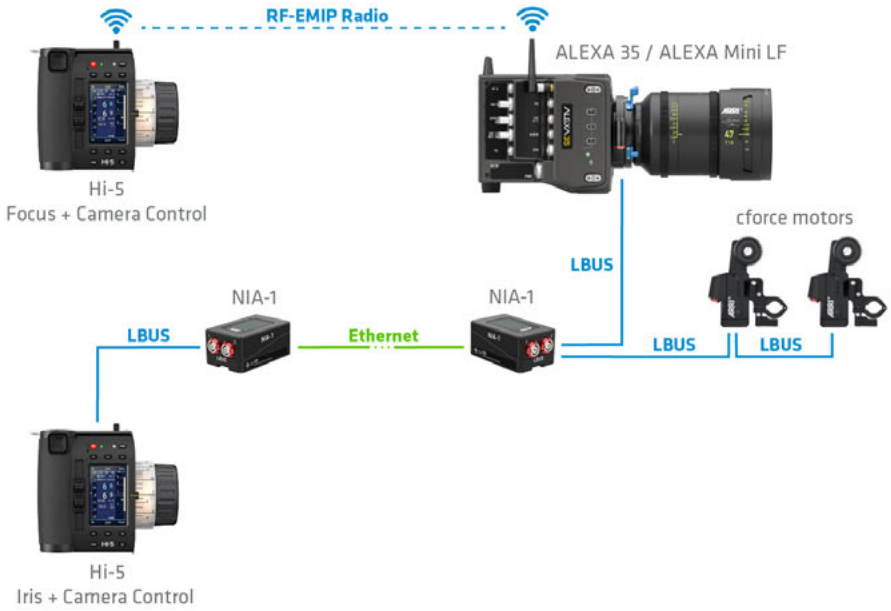


Network Settings	DHCP (default)
ECS Port Mode	LBUS (default)
Network Channel	Same for all paired NIA-1 devices

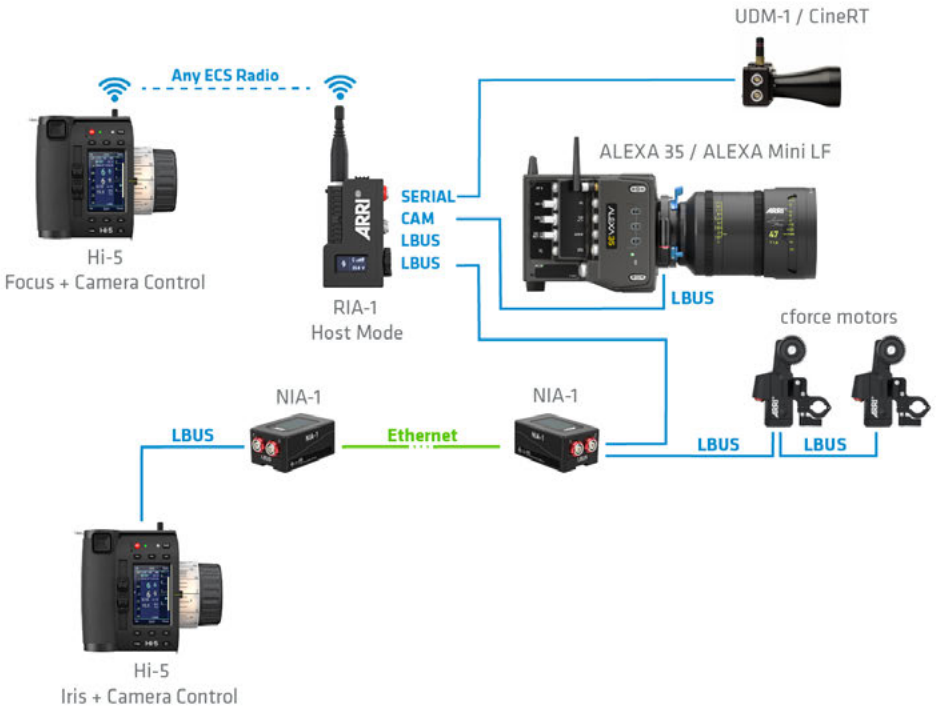
Network Interface Adapter NIA-1 as Range Extender with IP Infrastructure



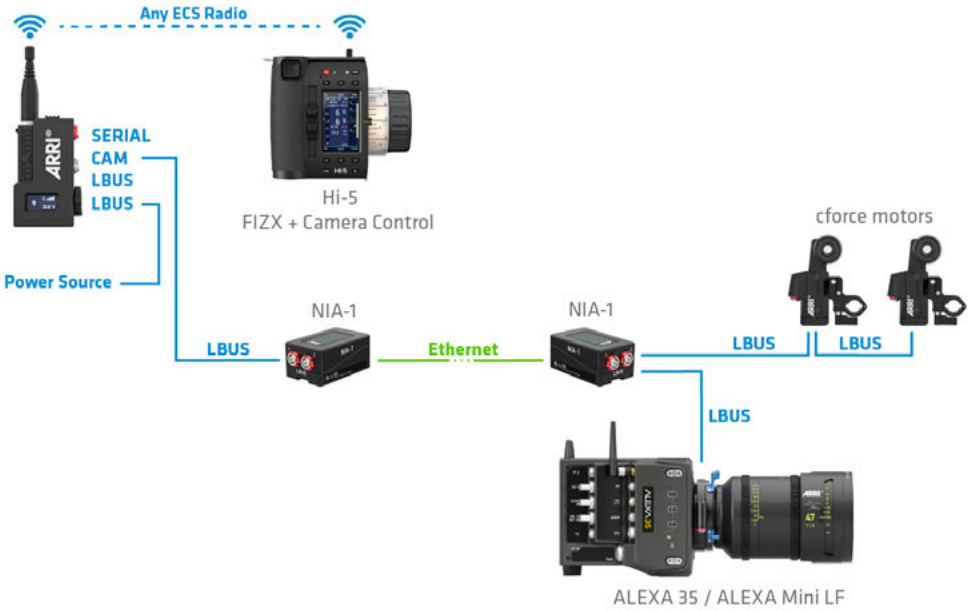
or



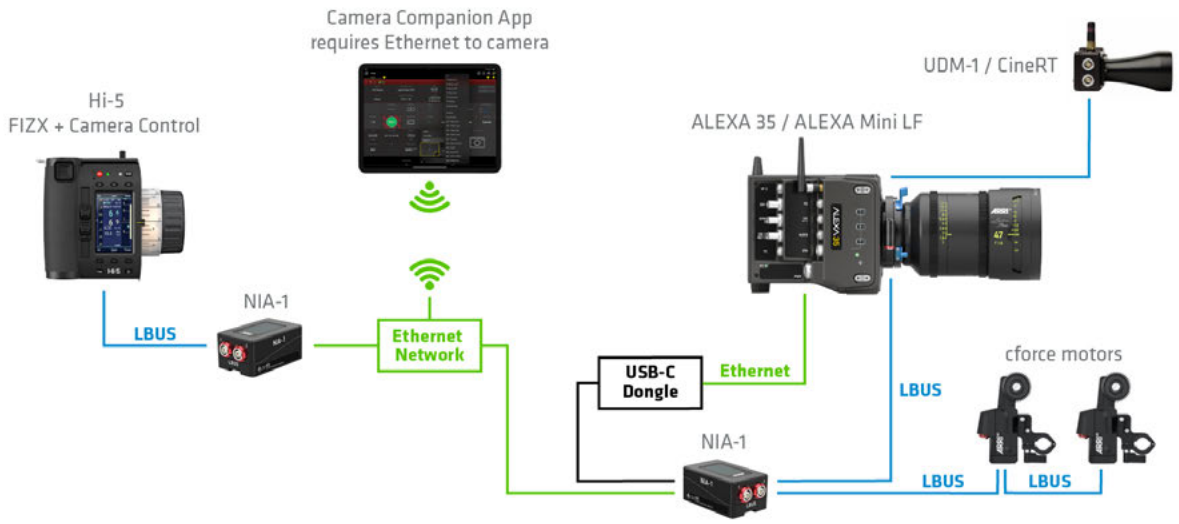
or


UDM-1 / CineRT
Any ECS Radio
ALEXA 35 / ALEXA Mini LF
SERIAL
CAM
LBUS
LBUS
Hi-5
Focus + Camera Control
RIA-1
Host Mode
LBUS
cforce motors
NIA-1
NIA-1
LBUS
Ethernet
LBUS
LBUS
Hi-5
Iris + Camera Control

or


Any ECS Radio
SERIAL
CAM
LBUS
LBUS
Hi-5
FIZX + Camera Control
cforce motors
Power Source
NIA-1
NIA-1
LBUS
Ethernet
LBUS
LBUS
LBUS
ALEXA 35 / ALEXA Mini LF

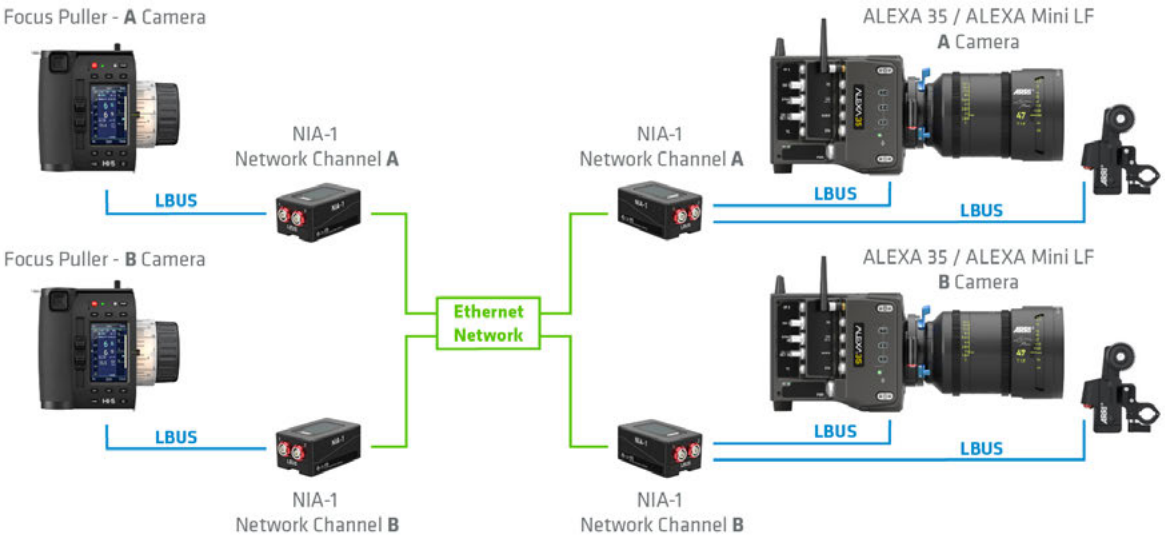
or



Network Settings	DHCP (default) or static, depending on the existing infrastructure
ECS Port Mode	LBUS (default)
Network Channel	Same for all paired NIA-1 devices

Multiple Network Interface Adapter NIA-1 Setups

The setup examples for using the NIA-1 as a range extender via IP infrastructure can be combined within a single IP network. The selected Network Channel then defines which NIA-1 devices are paired.

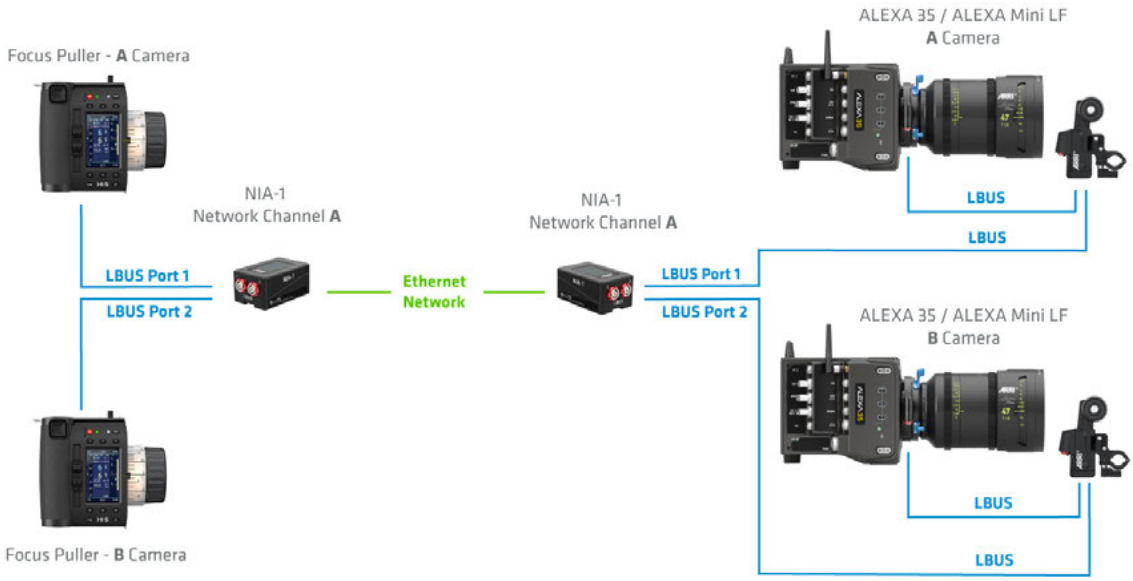


Network Settings	DHCP (default) or static, depending on the existing infrastructure
ECS Port Mode	LBUS (default)
Network Channel	Same for all paired Network Interface Adapter NIA-1 devices In the example above, the “A” and “B” devices will only receive communication from the respective Network Channel

HINT

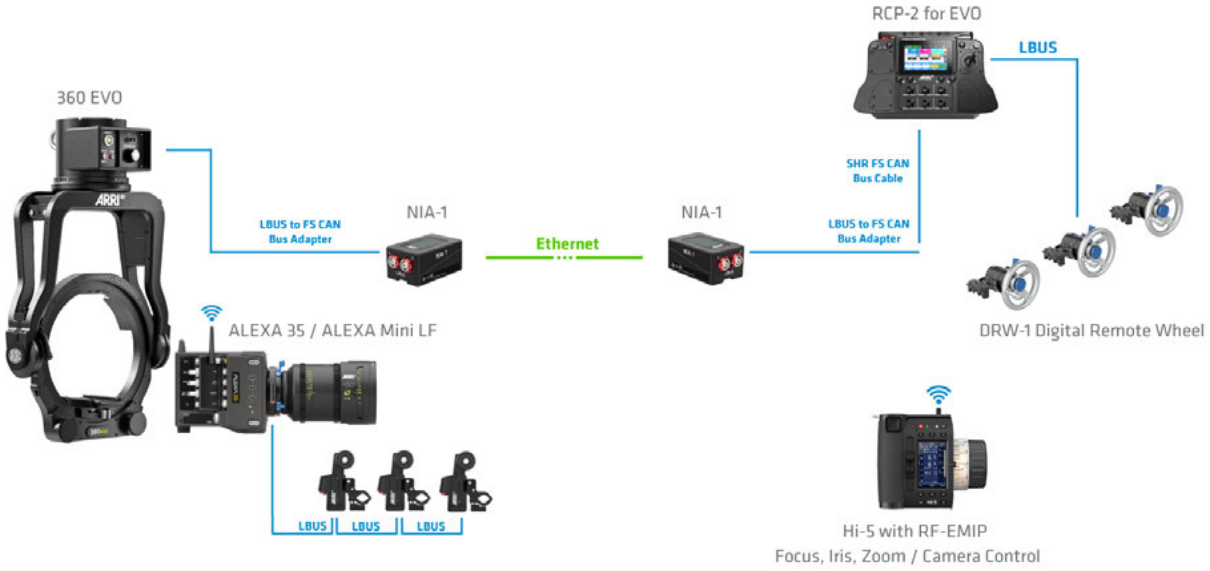
The NIA-1 provides up to 26 Network Channels.

Network Interface Adapter NIA-1 LBUS Tunnel



Network Settings	DHCP (default) or static, depending on the existing infrastructure
ECS Port Mode	LBUS tunnel on LBUS 1 (camera A), LBUS tunnel on LBUS 2 (camera B)
Network Channel	Same for all paired NIA-1 devices (e.g., “A” for the camera and Hi-5 above, “B” for the camera and Hi-5 below)

Network Interface Adapter NIA-1 FS CAN Setup



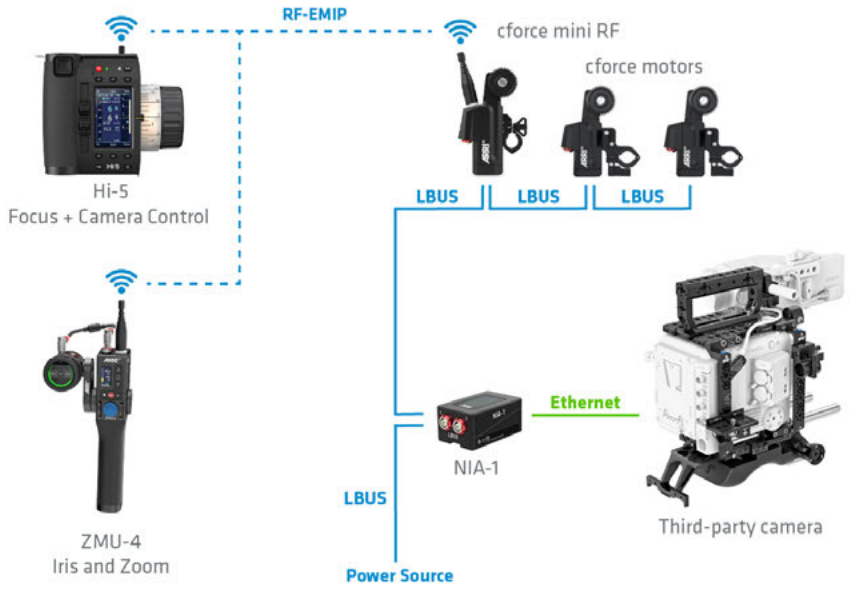
Network Settings	DHCP (default) or static, depending on the existing infrastructure
ECS Port Mode	LBUS (default) on LBUS 1, FS CAN on LBUS 2
Network Channel	Same for all paired Network Interface Adapter NIA-1 devices (e.g., “A” for the camera and Hi-5 above, “B” for the camera and Hi-5 below)

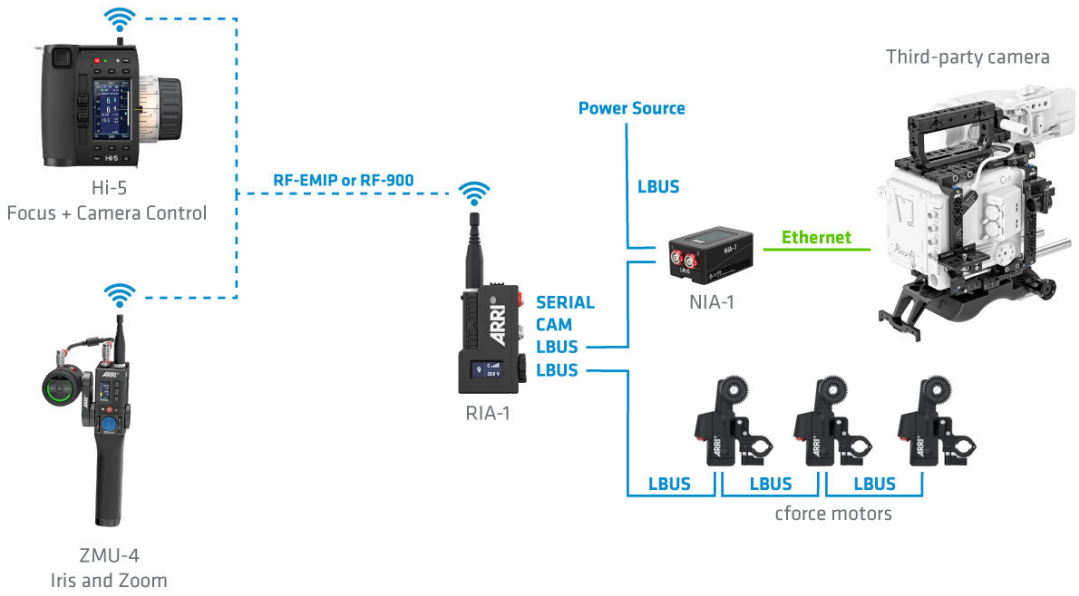
Network Interface Adapter NIA 1 as part of the LPS-1

Typical setups can be found at NIA-1 as Range Extender with IP Infrastructure.

Network Settings	DHCP (default) or static, depending on the existing infrastructure
ECS Port Mode	LBUS (default
Network Channel	Same for all paired NIA-1 devices

NIA-1 used to Control 3rd Party Cameras





Network Settings	Static IP Address fitting to the camera IP Address
ECS Port Mode	LBUS (default)
Network Channel	-
3rd Party Camera	Manufacturer and model according to the connected camera

NOTICE

The third-party camera control of Sony BURANO and Blackmagic URSA Cine cameras requires a license on the Hi-5 hand unit. Visit alshop.arri.de for further information.

Please visit the ARRI website for a complete overview of all configurations:
Configuration Overviews | Camera Systems | Learn & Help

6 Software Update

6.1 How to get a Software Update Package

You can find the Software Update Package (SUP) in the Electronic Control Systems download section on:

Overview Of All Current Software Update Packages | Technical Service | ARRI

Download the latest Software Update Package to your computer.

6.2 Update Procedure

The NIA-1 can be updated either per USB-C drive or over the Web UI.

Caution: Update via LBUS interface is not supported for NIA-1.

6.3 Update with USB-C Drive

The firmware must be placed on the drive into following folder (must be created if not existing):

ARRI/NIA-1/SUP

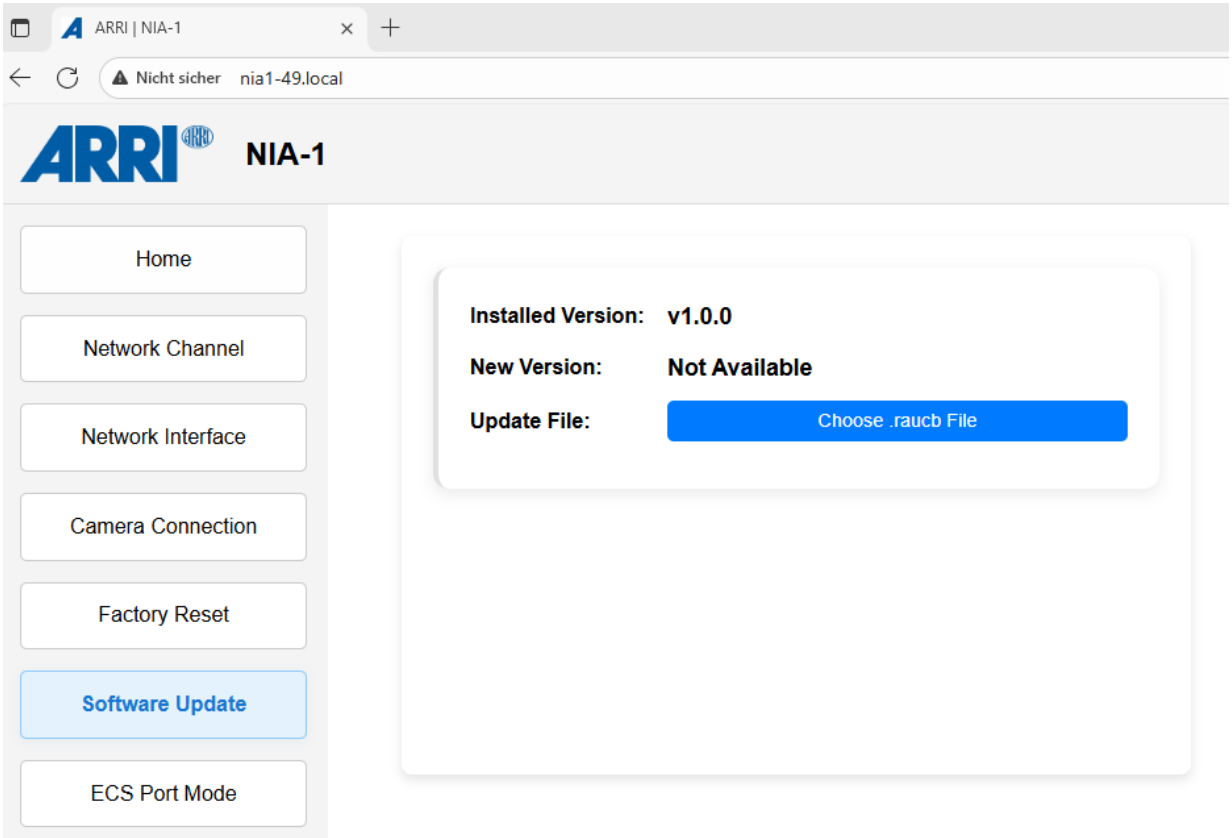
Plug the USB-C drive into the NIA-1 and start the update process over the display menu Software Update. The NIA-1 will automatically perform the update and reboot.

NOTICE

Do not remove the USB drive or the power supply during the update!

6.4 Update with Web UI

Enter the Web UI page Software Update.



Upload the software with the button “Choose .raucb File” and the following dialog.

After initiation of the update process, the NIA-1 will automatically perform the update and reboot.

7 Power Disconnection

WARNING

The NIA-1 has no power switch. To disconnect the device safely from the power source, pull the plugs. Mount and operate the device in an orientation that guarantees easily accessible plugs.

8 Appendix

8.1 Environmental Conditions

The NIA-1 should only be used and stored under certain environmental conditions.

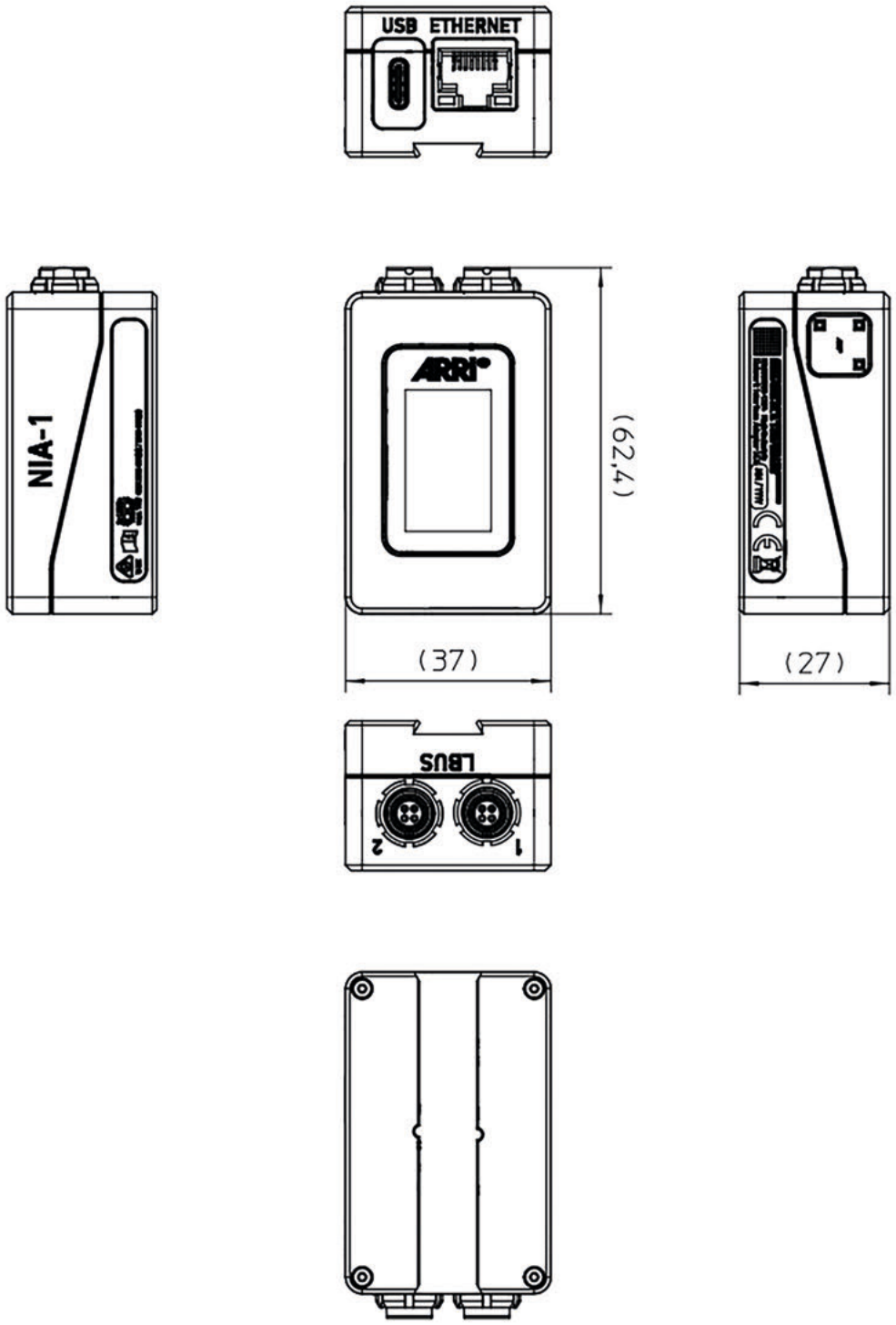
Check the following conditions before commissioning and operation:

Supply Voltage	6.3 - 34 V DC (LBUS) 4.75 - 5.25 V DC (USB-C)
Permissible Operating Temperature	-4° F to +122° F / -20° C to +50° C
Permissible Storage Temperature	-4° F to +122° F / -20° C to +50° C
Permissible Humidity	0 - 95% RH from -4° F to +113° F / -20° C to +45° C

8.2 Technical Data

Weight	0,22 lbs / 0,10 kg
Interfaces	2x LBUS (4pin Lemo) for LBUS devices; supports LBUS and LCS protocol 1x Ethernet (8pin RJ-45) for connection to the IP network 1x USB-C for software updates, USB devices and external power supply
Permissible Input Voltage	6.3 - 34 V DC (LBUS) 4.75 - 5.25 V DC (USB-C)
Power Consumption	5 W (without external USB-C device supplied) 10 W (with external USB-C device supplied)
Dimensions (L x W x H)	2.28 x 1.46 x 1.06"/ 63 x 37 x 27 mm

8.3 Dimensional Drawings



8.4 NIA-1 Sets and Accessories

K2.0052389

Network Interface Adapter
NIA-1

KK.0054199

Network Interface Adapter
NIA-1 Set

KK.0054200

Network Interface Adapter
NIA-1 Set (2x)

K2.0053976

Rotary Release Adapter
RRA-1


ARRI