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USER MANUAL

ALEUTIAN SUBSEA ZOOM CAMERA

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12.05.2021	A	Released	-
09.05.2021	B	Updated according to camera revD and firmware v6	Sven Hatteland
30.04.2026	C	Updated with description of bleed plug	Sindre Steinsvik

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CONTENTS

1. INTRODUCTION

1.1. PURPOSE AND SCOPE

This document outlines and defines the configuration and operation of the Aleutian Subsea Zoom Camera.

The manual is to be used by trained and competent personnel only.

1.2. ABBREVIATIONS

Abbreviation	Description
FOV	Field of View
IP	Internet Protocol

1.3. SUPPLIER CONTACT INFORMATION

Ixys AS
Langmyra 11
N-4344 Bryne
Norway

+47 51 42 22 22
post@ixys.no
www.ixys.no

1.4. DOCUMENT REFERENCES

DOC No.	Description
115329-ICS-PD-DAS-001	Product Datasheet
115329-ICS-MC-DWG-001	GA Drawing

2. HEALTH, SAFETY AND ENVIRONMENT

2.1. GENERAL

Safety Notes and General Precautions shall be presented to all personnel concerned prior to testing, operation, maintenance, and repair. The operations shall be performed by the responsible engineer/supervisor.
The personnel performing this job shall have knowledge of this type of equipment and have familiarized themselves with the applicable procedures and manuals for this product.

2.2. USER HEALTH AND SAFETY

This product is made to operate under many circumstances and specific cases for health and safety will not be described here but must be considered by the equipment manufacturer or owner.

CAUTION:

- By remote operating equipment, there is always a risk of people accessing the equipment without notice to the operator and it is therefore important to establish safety procedures for the specific equipment involved.

2.3. QUALIFICATIONS AND TRAINING

It is essential that operating personnel have been given training and education how to operate and maintain the software and equipment described in this manual. It is also essential that operating personnel have general operational experience.

The personnel responsible for the operation of this system must be appropriately qualified. The operating company must do the following tasks:

- Define the responsibilities and competency of all personnel handling this system.
- Provide instruction and training.
- Ensure that the contents of the operating instructions have been fully understood by the personnel.

2.4. NON-COMPLIANCE RISKS

Failure to comply with all safety precautions can result in the following conditions:

- Death or serious injury due to electrical and mechanical influences
- Product damage
- Property damage
- Loss of all claims for damages

2.5. UNACCEPTABLE MODES OF OPERATIONS

The operational reliability of this product is only guaranteed when it is used as designated. The operating limits given in this manual shall not be exceeded under any circumstances.

3. TECHNICAL INFORMATION AND DATA

3.1. TECHNICAL DESCRIPTION

The Aleutian Subsea Zoom Camera is designed to be used subsea down to 3000m. It sends a live video feed via ethernet.

3.2. TECHNICAL DATA

General	
Manufacturer	Ixys AS
Ixys Part Number	115329
Description	Subsea Camera Ethernet HD Zoom Aleutian
Weight in air	4900g
Weight in water	3000g
Dimensions	225 x Ø110
Supply Voltage	9-32VDC
Power Consumption	~8.9W
Benchmark latency	~80ms (from captured picture to presented on monitor)
Depth Rating	3000m
Resolution	1080P
Bit rate	0,5-40Mbps
Video compression	H264
Stream format	RTP(UDP)/MPEG-TS(UDP)/RTSP
Communication	Ethernet 10/100Mbps
Camera FOV@1080p	Horizontal ~88° in water
Default IP	10.13.37.243

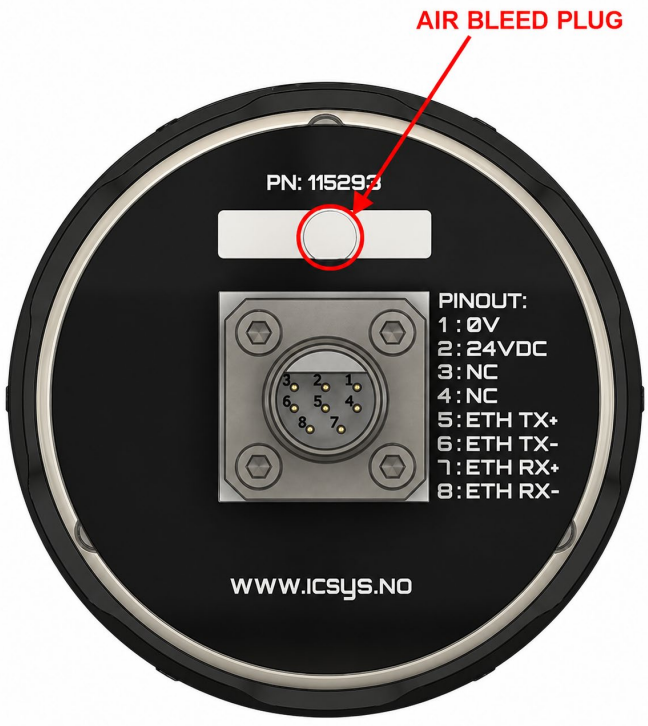
3.3. COMMUNICATION

The communication is Ethernet based.

3.4. FEATURES

- Live video feed
- Zoom control
- Focus control
- Iris Control
- Low Light Mode

4. DRAWING



Air bleed plug is placed behind Ixys sticker on endcap, before disassembling the Aleutian camera, make sure to open this port and release any internal pressure.

2. CONFIGURATION AND OPERATION

4.1. WEB INTERFACE

Configuration of the camera takes place in an inbuilt webserver. Open a web browser and enter the IP address of the unit (default 10.13.37.243). Video stream can be configured and the network settings of the camera itself can be altered.

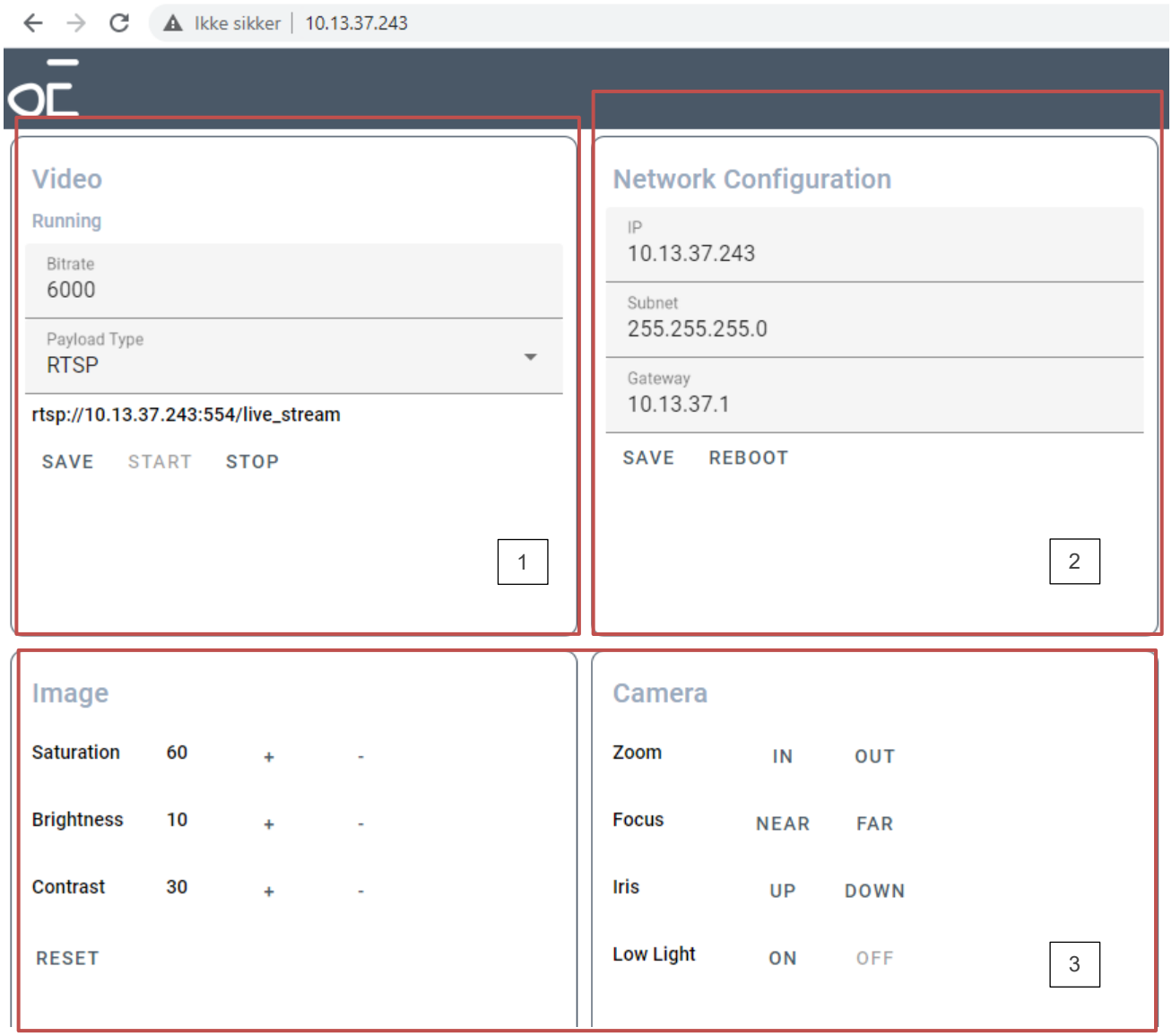


Figure 1 – Configuration web server

1	Stream Settings	Bitrate, destination IP address and the destination port number for video stream. Change between RTSP, RTP UDP and MPEG-TS type of stream. Save, stop, and start for changes to take effect.

2	Network Settings	IP address, Subnet Mask and Gateway address for the unit. Reboot for changes to take effect.
3	Image and Camera Adjustments	Adjust these to get optimal video for the situation. Press the "Reset" to revert to factory default settings. The camera is default in manual Iris mode, adjust exposure and iris for the current light conditions. Exposure and auto iris commands is web browser only. Auto iris function is for experimental use only.

4.2. HTTP API SPECIFICATION

/Api/start

This command starts the video stream. On restart the stream is always started

/Api/stop

This command stops the video stream. On restart the stream is always started

/Api/bitrate

Returns the current bitrate.

/Api/bitrate/{bitrate}

This command sets the bitrate of the video stream.

Range: 500 – 40000 (kbps)

/Api/zoom/in

This command starts the zoom in function, and it will continue in a fixed speed until the stop command is sent.

/Api/zoom/out

This command starts the zoom out function, and it will continue in a fixed speed until the stop command is sent.

/Api/zoom/stop

This command stops the zoom function at the current zoom level.

/Api/focus/near

This command starts the focus near function, and it will continue in a fixed speed until the stop command is sent.

/Api/focus/far

This command starts the focus far function, and it will continue in a fixed speed until the stop command is sent.

/Api/focus/stop

This command stops the focus function at the current focus level.

/Api/iris/up

This command opens the iris one step. This increases the light sensitivity and reduces the focus depth. The iris has 13 steps and at power up will always start at fully open.

/Api/iris/down

This command closes the iris one step. This reduces the light sensitivity and improves the focus depth. The iris has 13 steps and at power up will always start at fully open.

/Api/lowlight/true

This command removes the IR filter and sets the camera to black/white mode to increase the light sensitivity in dark environments.

/Api/lowlight/false

This command inserts the IR filter and sets the camera back to normal color mode.

/Api/image

Returns all image settings (brightness, contrast and saturation)

/Api/image/brightness/inc

This command increases the brightness level by 10.

Range: +/- 60

Default Value: 0

/Api/image/brightness/dec

This command decreases the brightness level by 10.

Range: +/- 60

Default Value: 0

/Api/image/contrast/inc

This command increases the contrast level by 10.

Range: 0 - 60

Default Value: 30

/Api/image/contrast/dec

This command decreases the contrast level by 10.

Range: 0 - 60

Default Value: 30

/Api/image/saturation/inc

This command increases the saturation level by 10.

Range: 0 - 120

Default Value: 60

/Api/image/saturation/dec

This command decreases the saturation level by 10.

Range: 0 - 120

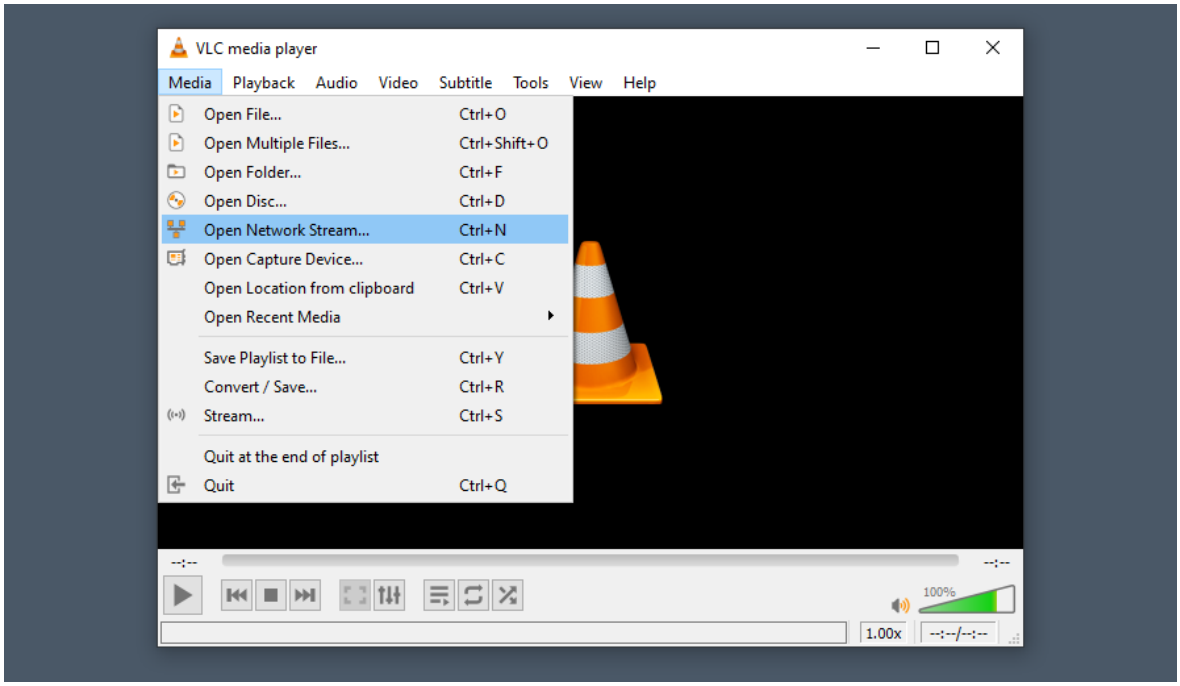
Default Value: 60

/Api/image/reset

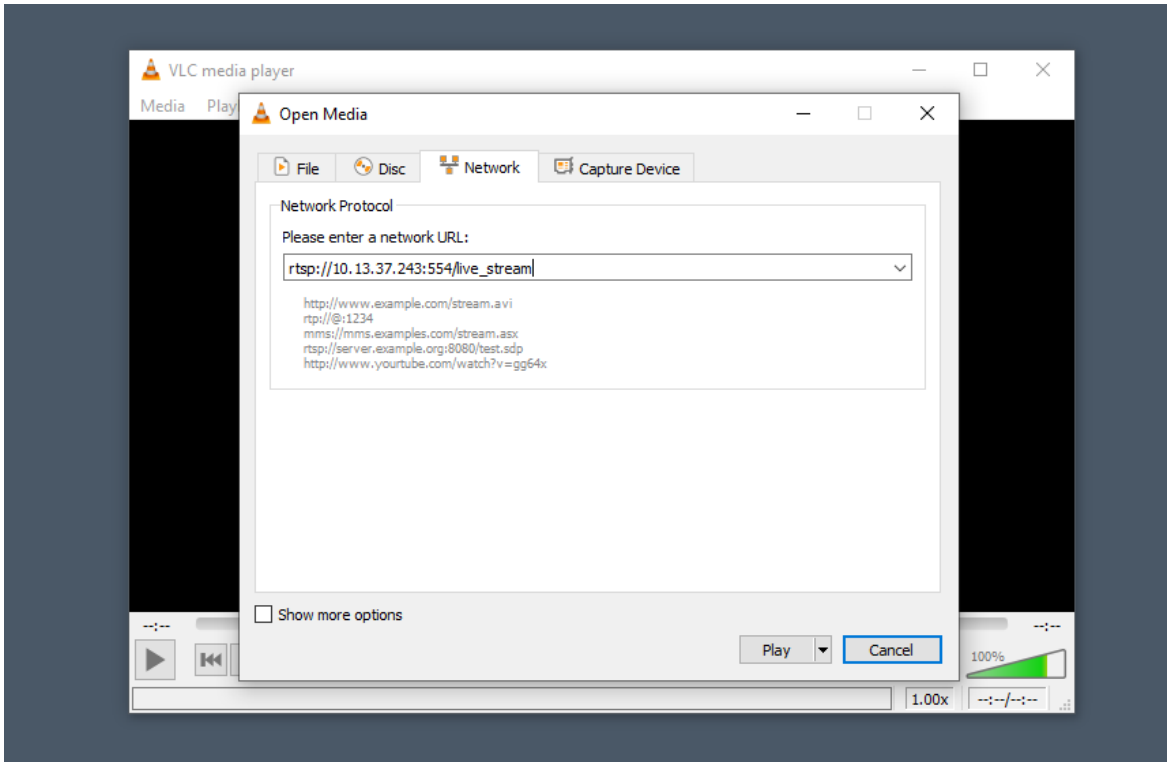
This command resets the image parameters to default values (brightness, contrast and saturation)

4.3. VIEW RTSP STREAM IN VLC PLAYER

To view MPEG TS stream in VLC Player with default settings, open VLC an select Open Network Stream.

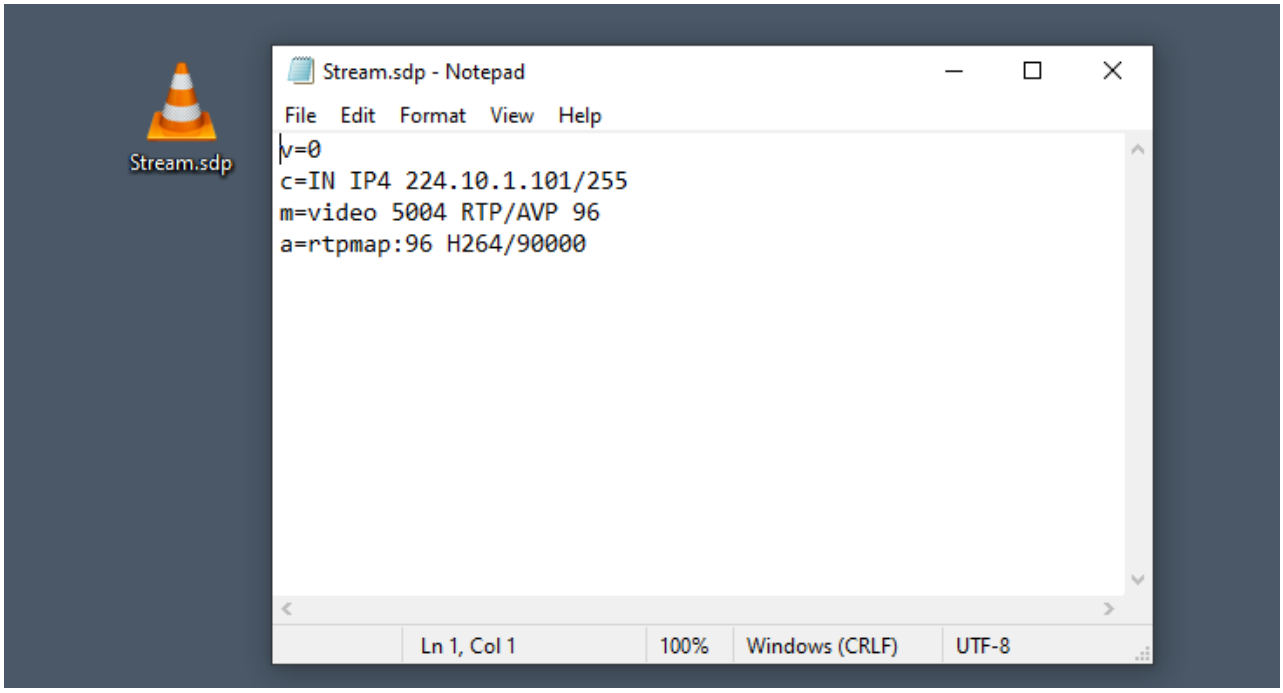


Enter network URL rtsp://10.13.37.243:554/live_stream and select Play.

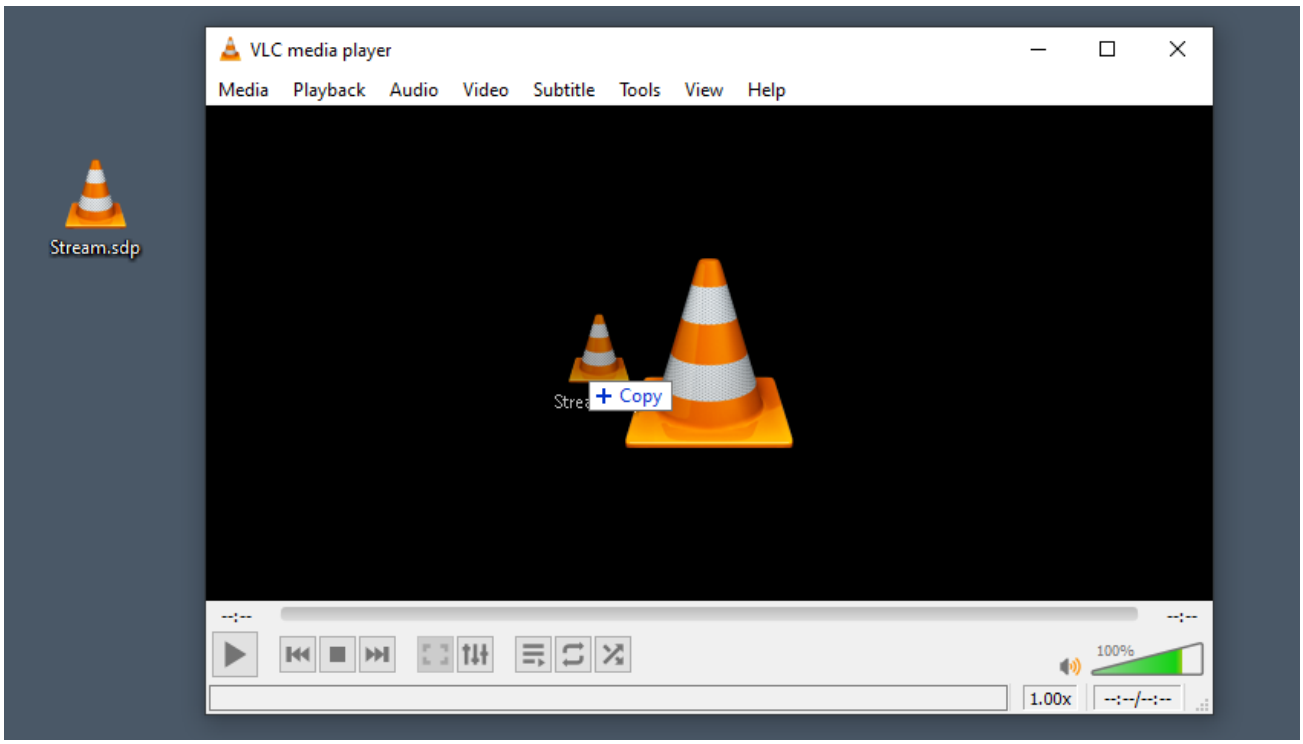


4.4. VIEW RTP UDP STREAM IN VLC PLAYER

To view RTP UDP stream in VLC Player with default settings, make a .sdp file with the following content:

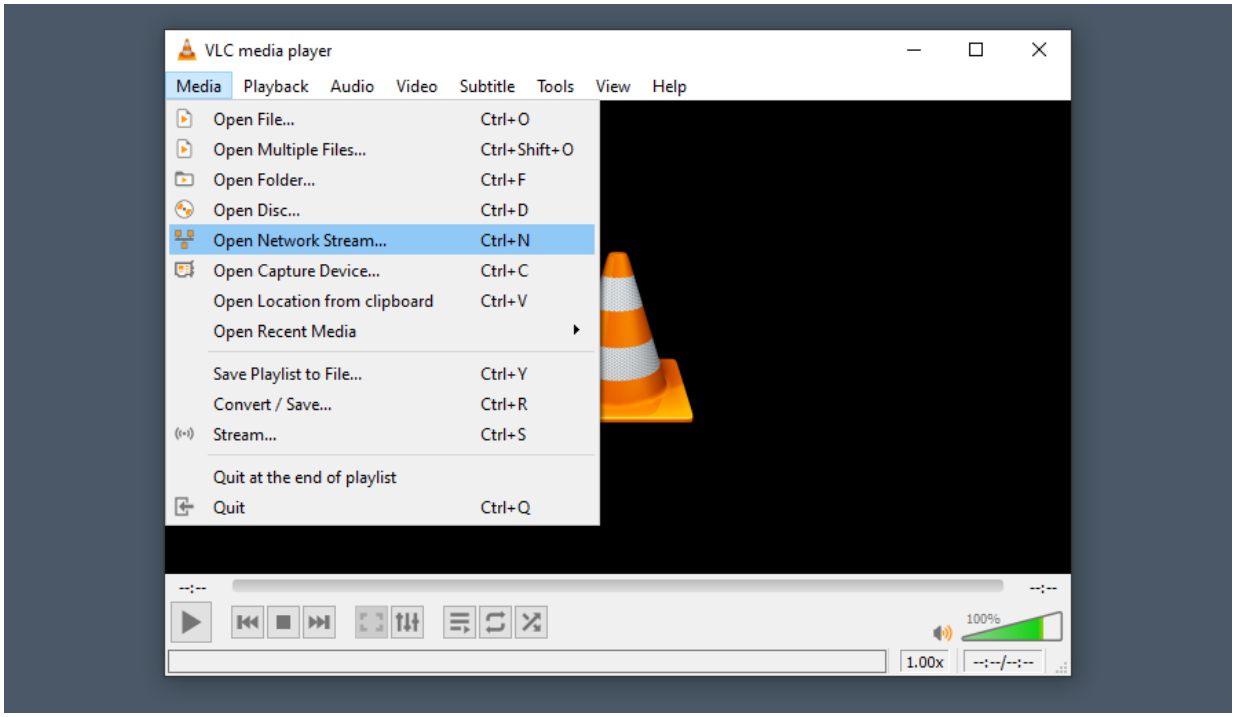


Open the file with VLC Player.

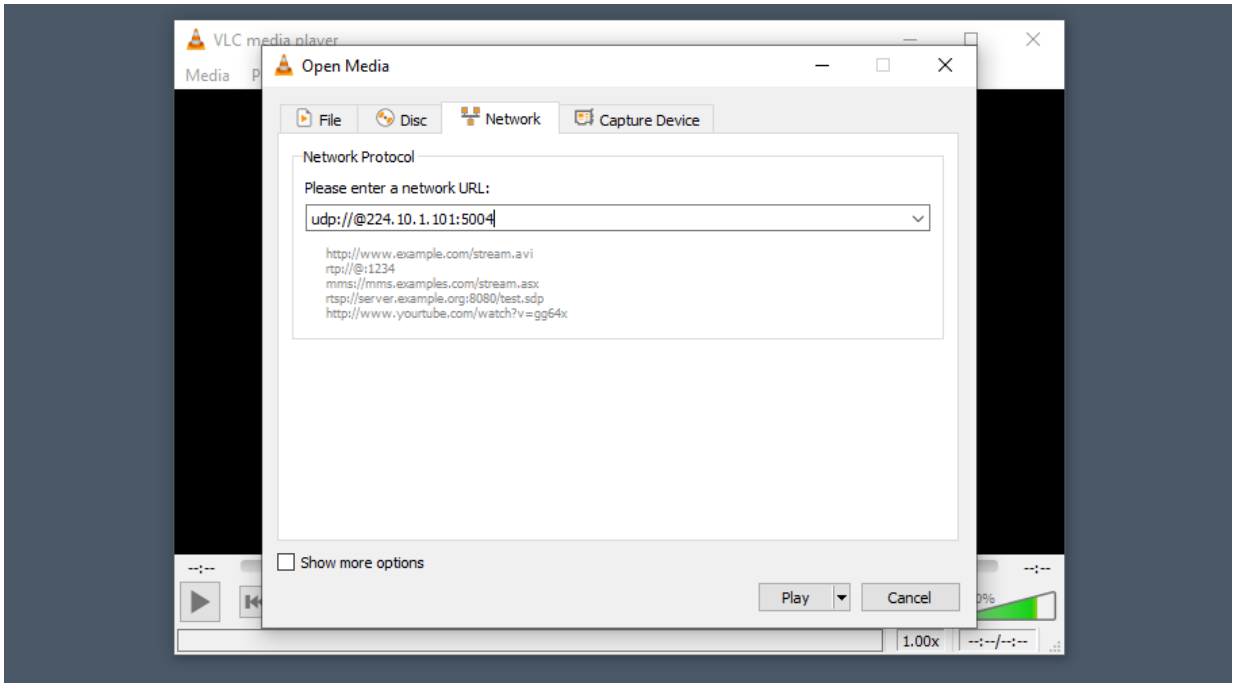


4.5. VIEW MPEG-TS STREAM IN VLC PLAYER

To view MPEG TS stream in VLC Player with default settings, open VLC an select Open Network Stream.



Enter network URL udp://@224.10.1.101:5004 and select Play.



4.6. TROUBLESHOOTING / FAULTFINDING

The below list is meant to provide some hints for troubleshooting but does not guarantee that the issue is covered by the list. Operational feedback will be used to extend the list in future revisions.

Trouble shooting		
Symptom	**Possible Causes**	**Remedy**
No Connection to the software application	• **Wrong IP settings**	• **Test connecting to the unit by the web interface.**
	• **Computer in wrong subnet**	• **Set IP address of computer to an address within the same subnet as the device**
No video feed	• **Wrong stream destination address**	• **Check the destination address in the web interface. Use Wireshark to check for incoming video feed frames on the designated port numbers**