LDX 150

Version 19

Release Notes

SW/FW Package_LDX150_92-00051-000
19-12-2022

PRODUCTION PACKAGE RELEASE CONTENT

All SW/FW Packages can be found at "Product Downloads"

Contents

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RELEASE NOTES LDX 150 **V19**: 19-12-2022

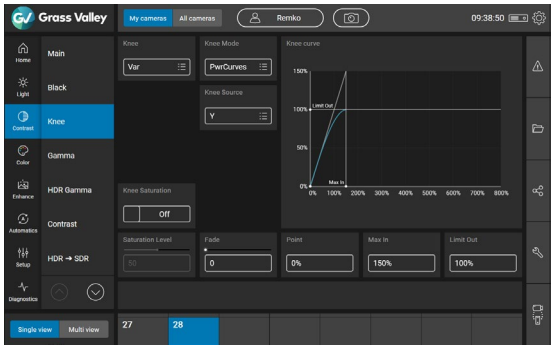
General overview

- **New Functionality:**

  - The classic gamma/knee SDR controls has been implemented. In the previous packages these SDR functions were mapped on the HDR to SDR down-mapper. In this package the down-mapper makes place for a native SDR processing path. This results in the below changes:
    - ➢ The controls to configure the HDR to SDR down-mapper are no longer available.
    - ➢ The SDR functions that already were available remain available and are in a dedicated SDR path that is branched off from the HDR path. HDR functions that also impact the SDR output are:
      - HDR Master-gain RGB Gains
      - Flare
      - White shading
      - Master black and RGB black levels
      - HDR Variable Gamma
      - Color Corrector
      - Skin

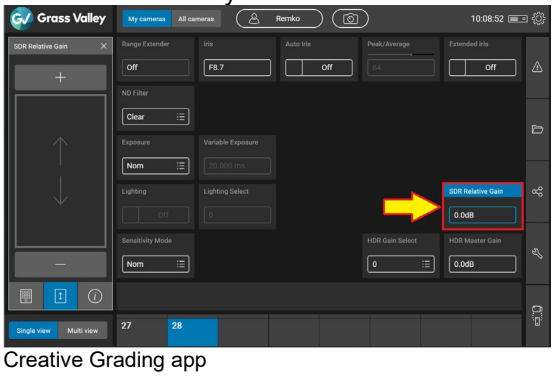
    - ➢ The new SDR functions that become available on top of the already available functions are:
      - Black: SDR black level (relative to the HDR black level)
      - Knee: Knee-Power Curves, Knee-Desaturation, Knee-Source selection
      - SDR-Gain: SDR-Relative-Gain

    Note: previous stored scene files might not give the same video look once recalled after the update of the camera with release V19.0. New scene files need to be created and stored.



  - Hide SDR functionality (Knee, Gamma, Contrast, Blackstretch) in HDR workflow.

  - Implement SDR Relative Gain. This function sets the gain of the SDR signal, relatively to the HDR Master Gain. This function is only available in ‘Mixed’ video workflow.



Creative Grading app

Camera Menu (Production Setup > Levels > Gain)

- The visibility of the SDR and HDR controls is dependent on the Video-Workflow selection in the Installation menu:
  - When set to HDR the HDR-controls are available.
  - When set to SDR the SDR-controls become visible and the HDR-controls are hided and their values are set to default. (These values are set to default because they have impact on the SDR output).
  - When the workflow is set to Mixed-Mode the HDR- and SDR-controls are available.

- Implement 4K Filmic modes in XCU mode. (The UXF XCU needs to have at least package 24).
  - 4K23.98, 4K24.0, 4K25.0, 4K29.97

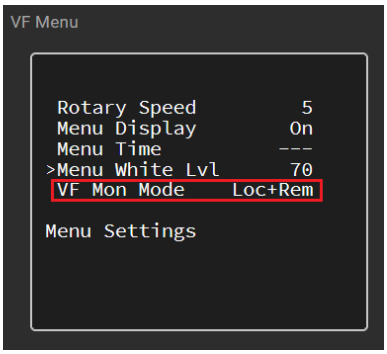
  Note: A UHD Filmic license in the camera is needed to have these video modes available.

- Add 1080p24 video mode.

- Implement MQTT client id to MQTT broker connection for Tally control (IS-07).

- NMOS receivers description now has Group Hint tags.

- Implement 2 separate video streams for the VF and VF monitoring out (BNC-E).
  - Enable independent text insertion on VF Monitoring and VF.
  - Add support for remote camera menu display on BNC (BNC-E).

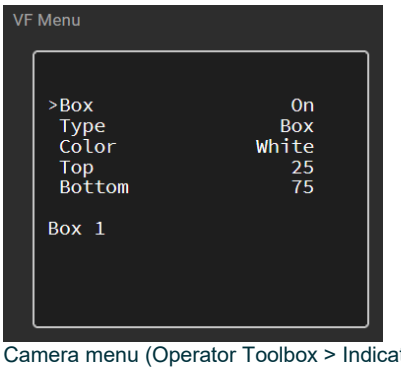


Camera menu (Operator Toolbox > Menu Settings):

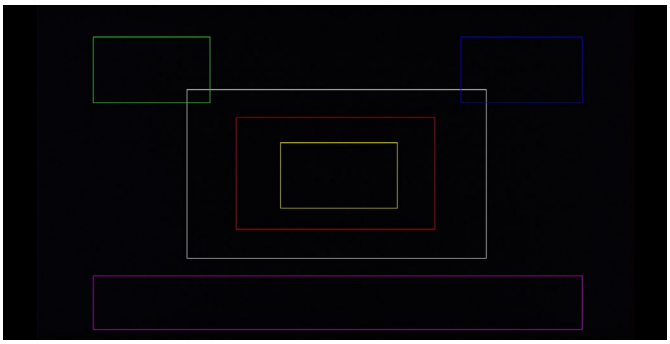
- **Local** (Loc): When controlling the camera menu with the CGA, the menu is only visible on the CGA.
- **Local + Remote** (Loc+Rem): When controlling the camera menu with the CGA, the menu is visible on the CGA and VF monitoring output (BNC-E). In the VF monitoring output there will be an indicating text: (**Remote control**) to indicate that the vf-menu text is controlled remotely.

Note: The local camera menu controlled from the camera has priority on the VF monitoring output (BNC-E).

- 4 extra region of interest boxes in the VF and VF monitoring output.
  To have the 4 extra boxes available the VF needs to have at least the following Package version:
  - 7 inch VF: Package version 5 (6 boxes in total)
  - 2 inch VF: Package version 5 (5 boxes in total)



Camera menu (Operator Toolbox > Indicators > Box)


VF/VF monitoring output

- The color, type and dimensions of each box can be adjusted in the camera menu (Operator Toolbox > Indicators > Box)
- VF Boxes 3 to 6 are hidden when multi-view is active.

- **Known issues:**

  - In p23 and p24 (UHD and HD) JPEGXS modes, the timestamps of the ST-2110-22 stream is not completely correct. The JPEGXS stream itself is correct and can be received.

- **Bug fixes/Improvements:**

  - In 1080i video mode the first 2 active lines (Line 21-22) of the output are blanked.
  - Improved audio and intercom receiver buffer handling to avoid break-up with redundant networks that have higher jitter.
  - No VF communication when 7" VF is disconnected and reconnected.
  - VF output on BNC E has no VPID in 1080i mode.
  - BNC-D as return B source does not work in XCU mode.
  - VF-Ext Multiview Monitor 2 set to VF-Ext, changes after power cycle.
  - Improved high speed trick modes operation:
    - Variable Exposure time indication and setting in ms has changed from steps of 1/10 (1.0 ms) to steps of 1/1000 (1.000 ms) for more precision.
    - V-shift level unit has change to ms for more precision.
    - In high-speed video modes, Exposure Time always ‘Nom’ after power cycle
  - Change default of Color Protect function to ‘On’.
  - SDR Blacklevel control has no effect in video.
  - Bug in Contrast calculation.
  - VF Boxes 3 to 6 not hidden when multi-view is active.
  - At service level 1, with menu “Disp = Time”, menu text of inactive menu may get shown.
  - Audio channel info on IS04 Source page is not correct.
  - Add actual audio/intercom channel selection to nmos source page.
  - No NMOS pages and registry when changing nmos control interface.
  - Update for DHCP functionality:
    - C2IP IP address incorrect in manual mode
    - DHCP for C2IP not restarted when sfp link comes back
    - Status of DHCP is not visible in the diagnostics

    - DHCP is not started when in Local Mode
    - Do not start streams if Local address is at 0
    - Aims receivers are not working when DHCP is used for SFP modules

- Changing HDR range gives distortion on JPEG-XS stream output.
- Black desaturation is too aggressive.
- Primary/secondary naming in NetworkInfo file.
- Vshift level controls XCU vshift level in 4K video modes. This is incorrect.
- Change of Sensitivity Mode from menu requires confirmation.
- Change default UI value for SDR Black Level to 50.
- Number of Nmos registries diagnostics is incorrect.
- MQTT connection is not established when first connection attempt fails.
- NMOS issues found during JTNM testing:
    - Audio channel info on IS04 Source page is not correct.
    - Add actual AI channel selection to nmos source page.
    - AI channel assignment dataType has no .asString() function.
    - Split up unknown audio channels in source page to satisfy the NMOS test tool.

- SDP information is not visible in the staged page.
- IS04 attached_network_interface missing from self page:
    - Added for the media interfaces.

- Improve switch accuracy time during IS05 activate_delayed and activate_absolute requests.
- Support for nmos IS05 activate-immediate request:
    - For an IS05 activate-immediate request the response to a patch command must be send when the active pages are updated.

- No NMOS pages when changing nmos control interface and no registry.

RELEASE NOTES LDX 150 **V18**: 01-11-2022

Maintenance update (Production only) due to the introduction of new PCBA's:

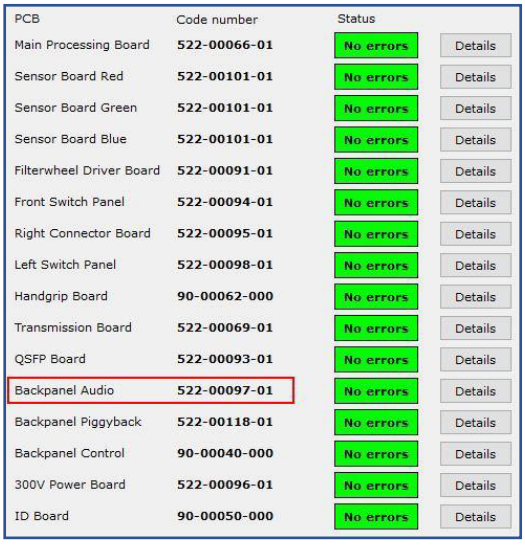
- A new PCBA Back Panel Audio Board will be introduced for the LDX 135/150.
  The previous board with part nr. **522-00097-01** will be replaced by a
  new board with part nr.: **90-00144-000**.

Important Note:

When this board is used in the LDX 135 or LDX 150 the minimum required SW/FW Package version must be **V18**.

For the LDX 100 the minimum required SW/FW Package version **V12** will be released at a later stage.

In the LDX Inside you can see what board is installed:



PCB	Code number	Status	
Main Processing Board	522-00066-01	No errors	Details
Sensor Board Red	522-00101-01	No errors	Details
Sensor Board Green	522-00101-01	No errors	Details
Sensor Board Blue	522-00101-01	No errors	Details
Filterwheel Driver Board	522-00091-01	No errors	Details
Front Switch Panel	522-00094-01	No errors	Details
Right Connector Board	522-00095-01	No errors	Details
Left Switch Panel	522-00098-01	No errors	Details
Handgrip Board	90-00062-000	No errors	Details
Transmission Board	522-00069-01	No errors	Details
QSFP Board	522-00093-01	No errors	Details
Backpanel Audio	522-00097-01	No errors	Details
Backpanel Piggyback	522-00118-01	No errors	Details
Backpanel Control	90-00040-000	No errors	Details
300V Power Board	522-00096-01	No errors	Details
ID Board	90-00050-000	No errors	Details

The new board will indicate "**90-00144-000"** for the new Backpanel Audio board.

If a new board is installed and the SW/FW Package is NOT updated to the above mentioned level, there will be NO audio and intercom functionality available.

- Support for new handgrip board: **90-00160-000**

RELEASE NOTES LDX 150 **V17**: 04-10-2022

- **Problem solved:**

  - When the camera is configured in a XCU environment (“Installation” > “Camera Mode” set to “XCU”), sometimes, and ONLY at power up, the unit could have been
  changed to IP mode instead (“Installation” > “Camera Mode” set to “IP”).

- **New Functionality:**

  - Dissolve, used with scene file or snap snapshot recall actions.

    Dissolve will gradually transition values of the main camera parameters like Iris, Black, Gain, Detail and Color Temperature from their current value to the value from the recalled file.

    In the VF menu “Configuration” > “Files” > “Scene Files” > “Recall”, 2 items “Dissolve Mode” and “Dissolve Time” can be selected
    “Dissolve Mode” to be set to “OFF”, “Tally” or “Always”
    Always will use a dissolve every time a file is recalled.
    Tally will only apply a dissolve when tally is active.
    When set to Off dissolve is never active.

    “Dissolve Time” selects the duration of the dissolve transition period for scene file recall and snapshots recall actions.
    It can be set between “0.5” and “10.0” sec.

  - Support for extra box indicators in 7” and 2” Viewfinder.
    “Operator Toolbox” > “Indicators” > “Box”.
    For the 7” VF a selection of 6 (was 2) boxes can be set.
    For the 2” VF a selection of 5 (was 1) boxes can be set.

  - **Important Note:**
    For this new functionality the 7” and 2” Viewfinders minimum SW/FW Package v05 is required. (See also **CSB-25221**)

  - Separate remote and local menu control.
    When controlling the camera VF menu, remotely from the CGA or Web Interface, it will not be visible anymore in the viewfinder.

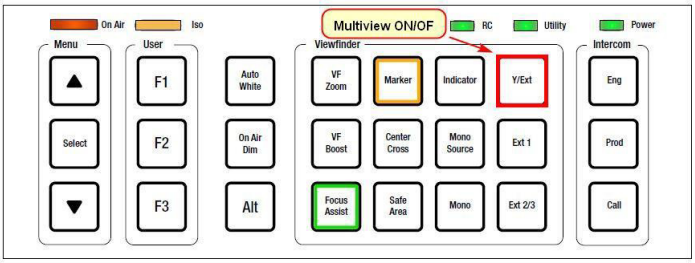
  - Add Color Protect in HDR with default “on”

  - Create Multiview user interface and control for viewfinder video

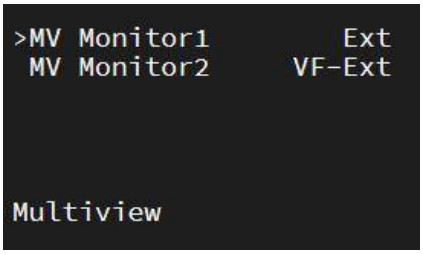
  - The pick-me button  , on the camera back panel and left cover, can be assigned for Multiview on/off control.
    Operator Toolbox > User Buttons > PickMe Btns > PickMe to be set to “None”,
    “Pick Me” or “Multiview”.

In a SXP configuration, the “Y/Ext” button will be used to activate/deactivate Multiview.



A submenu named “Multiview” has been added to the Operator Toolbox > User Buttons menu.
- In XCU mode the preset values for the Multiview channel selections (MV Monitor 1 and MV Monitor 2) can be defined to be “Ext”, “VF-Ext” or “BNC-D”.
- In Local/IP mode the values of these presets are named “VF-Ext”, “Ext1”, “Ext2”, “Ext3” and “BNC-D”



- Add link offset diagnostics to JPEG-XS receivers to support redundancy
- Add dedicated setting for IP main video delay in case of JpegXS
- Add option to set the DSCP field in IP header of outgoing streams
  Value 0-63 can be set by user (6 bit value of DSCP field).
- Support for unicast outgoing/incoming streams.

RELEASE NOTES LDX 150 **V16**: 18-05-2022

Note 1:

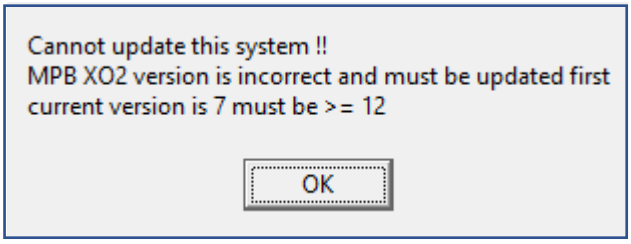
- For the LDX 150 ONLY, the update of the SW/FW Package from v05 or lower, to v16 or higher, the XO2 Boot sw v00.07 on the Main Proc. board (MPB) need to be updated to XO2 Boot sw v00.12 !!! (Installation on a LDX 100 will be blocked.)
- See next page for detailed information.

Note 2:

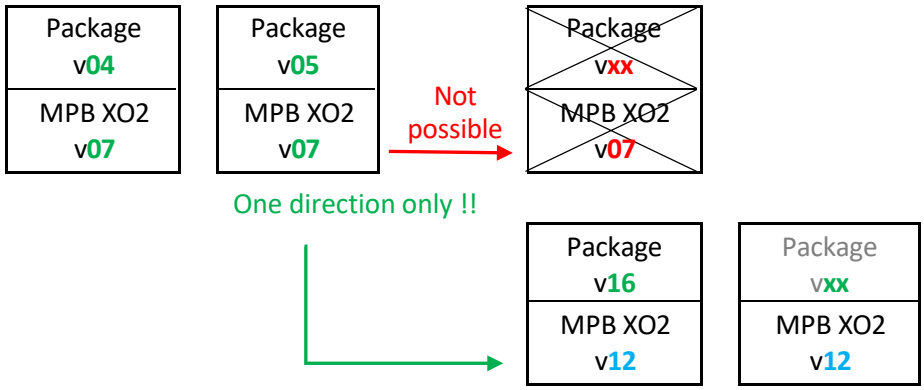
- The version v1.69.0041 of the Camera Connect (CSB-24813) is required i.c.w. the new SW/FW Packages for LDX 100v10 and LDX 150v16
  The use of the new packages for LDX 100/150 in combination with a previous version of the Camera Connect application may result in lost functions in the Web UI and the XML protocol interface !!!

Note 3:

- After the installation, ONLY for the LDX 150, a Black Calibration is needed in one of the xxx/150 and in one of the xxx/179 video modes.
- When the MPB XO2 update for the LDX 150 with SW/FW Package v05 or lower, is NOT done, prior to the installation of the new SW/FW Package v16 or higher, the following message from the GV Scripter will appear on the screen:



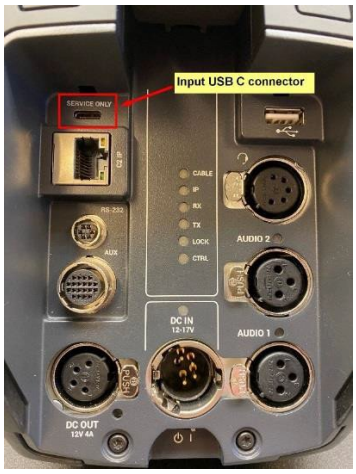
- As a result of this, for the LDX 150, only the following combination is possible:



- **How to Update MPB XO2 Boot sw. on LDX 150 to v12:**

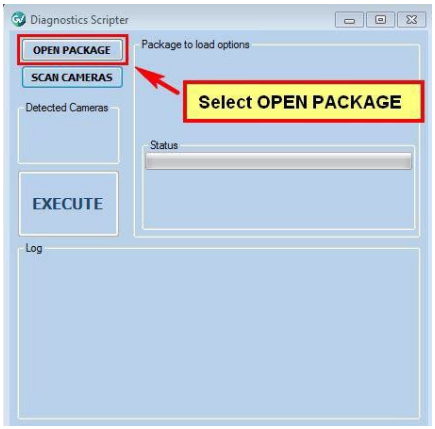
1. Download and extract the **LDX150_MPB_XO2_v12_Programmer.zip** file on your PC. At location XO2 Update for LDX 150

2. Connect your PC via USB 2.0 directly to the camera USB C connector.

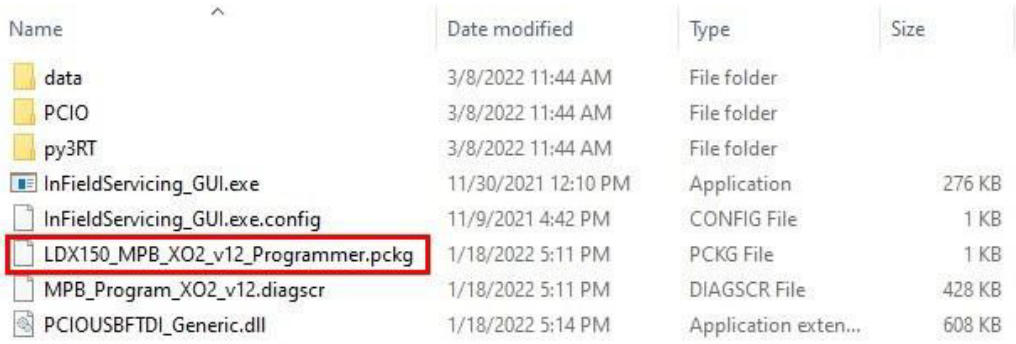


USB C connector on LDX 150 camera.

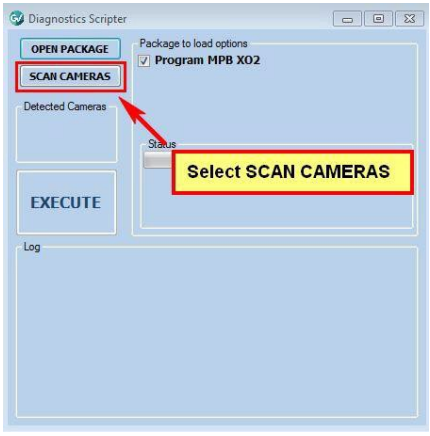
3. In the extracted file, start the "**InFieldServicing_GUI.exe**" which will open the following Diagnostics Scripter program and select "**OPEN PACKAGE**"



4. Select the file “**LDX150_MPB_XO2_v12_Programmer.pckg**” as indicated



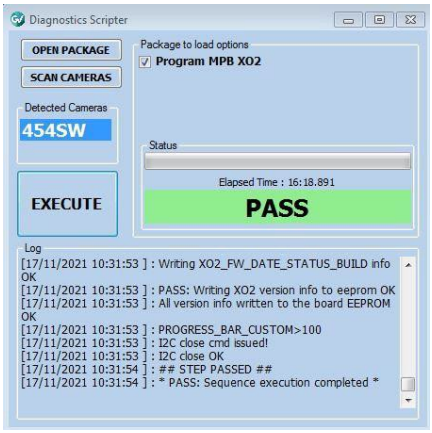
5. Select “SCAN CAMERAS”



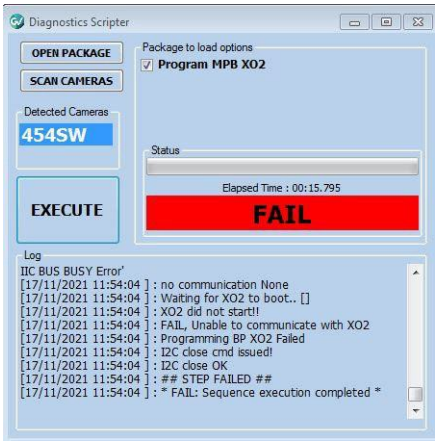
6. On the next screen the displayed PID is NOT the camera PID but the connected back panel PID. Select “EXECUTE”

Note:
Depending on the windows version this can take up to 15 minutes !!!!

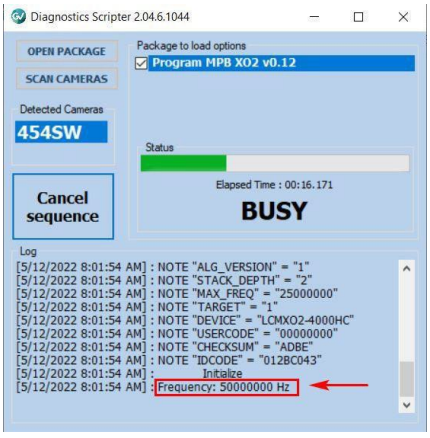
7. When finished the following message will appear on the screen.
   Disconnect the USB-C connector and restart the camera.
   The SW/FW Package **v16** or higher must now be installed.



8. When the programming is interrupted for some reason, the following message will appear.
   In that case repeat the sequence from step 3.



9. Sometimes it happens the program stops at “Frequency 50000000 Hz” without any further progress.
   In this situation select “Cancel sequence”, switch OFF camera and select “EXECUTE” again.



New functionality:

LDX100/150 Series HDR and SDR controls

The LDX100/150 Series cameras can output HDR signals, SDR signals or a combination of both.

To make the LDX100 Series cameras easier to use, side by side with LDX80/90 Series cameras, support will be added to the LDX100/150 Series for a purely SDR workflow, a purely HDR workflow and a mixed workflow.
The mixed workflow corresponds to the current implementation and gives the widest range of functionality, but also the highest complexity.

A new setting will be implemented named **"Video Workflow"**, which can have the values "**SDR**", "**HDR**" or "**Mixed**".
This can be done at "**Installation**" > "**Signals**" > "**Video Workflow**".

The user must make a choice about the way of using the camera, by setting the video workflow to a specific value.

- If it is set to "SDR" then all source selections will be set to SDR.
- If it is set to "HDR" then all source selections will be set to HDR.
- If it is set to "Mixed" then the source selection settings can be controlled by the user at the menu item "**Sources**".

In the **Mixed** workflow, which allows control of both HDR settings and the SDR settings, the user has to be aware that changes in HDR settings such as HDR Gamma will also affect the SDR signals.

In the **SDR** Workflow, the settings in the HDR Video Processing block which affect the SDR signal are automatically set to fixed values which are optimal for HDR to SDR conversion.

In the "**Mixed**" position the SDR Compatibility Mode ("**SDR Compat Mode**") can be controlled.
This can be done at "**Installation**" > "**Signals**" > "**Video Workflow**".
If the SDR Compatibility mode is set to "**On**", the same controls for Knee, Gamma, Contrast and Black Stretch, as used by the LDX80/90 Series cameras, become controllable.

Note:

- In 3xUHD video modes, the HDR/SDR mode can only be "HDR" or "Mixed" because the 4K Phases signal is always HDR.
- In XCU configuration, the HDR/SDR mode can only be "SDR" or "Mixed" because the 2K Live signal to the XCU is always SDR.

Gamma, Contrast, Black Stretch and Knee:

In SDR Compatibility Mode, this functionality becomes available.

The **Gamma**, **Contrast** and **Black Stretch** and **Knee,** functionality has been implemented as part of the HDR to SDR conversion video processing in the LDX100 Series.
This means that it is located behind the HDR Video Processing, so it is affected by the HDR settings, e.g., HDR Gamma.
This is different from its location in the LDX80/90 Series Video Processing chain, where it was independent from the HDR processing.

Master Gain:

In the LDX80/90 Series, the original Master Gain control is used along with a separate HDR Master Gain.
This is because there are separate video paths for SDR and HDR, each with its own gain block in firmware and it was decided that it was useful to have separate Master Gain settings for both paths.
In the LDX100 Series, there is only a single gain block in firmware.

Depending on the Video Workflow, either the SDR Master Gain control or the HDR Master Gain control is controllable in the LDX100 Series.
In the "**SDR**" workflow the **SDR Master Gain** control is used, where in the "**Mixed**" and "**HDR**" workflows, the **HDR Master Gain** control is used.

Color Gamut and Saturation:

It must be possible to control Color Gamut separately for HDR and SDR because they will typically be set to different values: REC2020 for HDR and REC709 for SDR.

This will not be changed.

Note that in the LDX100/150 Series – unlike in the LDX80/90 series – these controls aren't independent, because the SDR processing is done after the HDR processing.

Consequently, it is not possible to set the SDR Color gamut to REC2020 unless the HDR Color gamut is set to the same value.

Both in the LDX80/90 series and in the LDX100/150 series, separate HDR and SDR settings exist for saturation.
As is the case for Color Gamut, these settings aren't completely independent in the LDX100/150 Series.
A change of the HDR Saturation affects the input signal of the HDR to SDR Block.
But if the HDR saturation does not get below 25%, the effect of the HDR Saturation level is automatically compensated for in the calculation of the SDR saturation.
This means that independent control of SDR saturation and HDR saturation is possible.

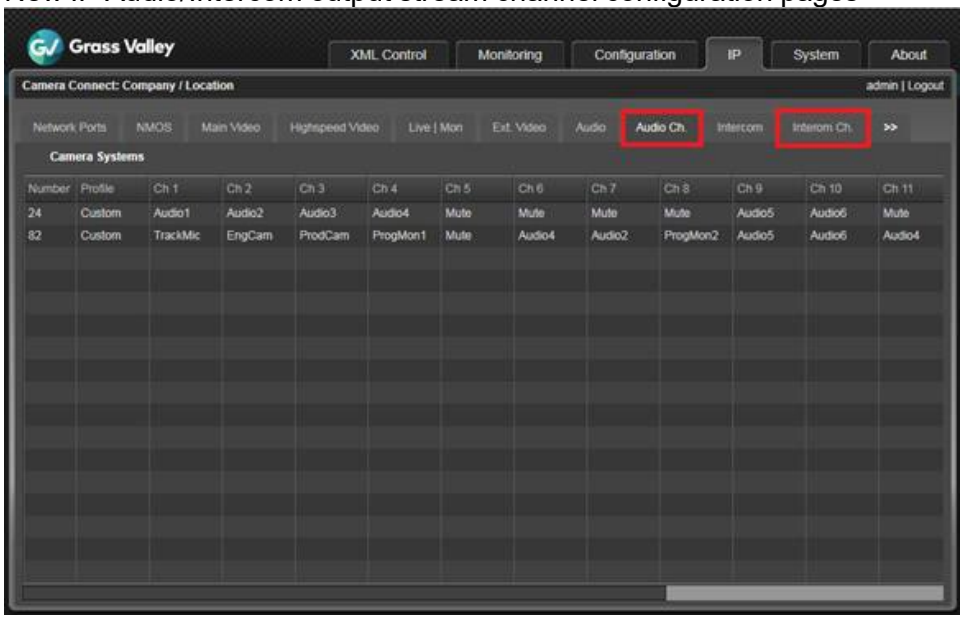
If the Video Workflow is set to "HDR", only the HDR Saturation will be controllable.
If it is set to "SDR", only the SDR Saturation will be controllable. In the "Mixed" workflow, both settings will be controllable.

Other new functionality:

- Add user assignable channel selection for outgoing audio/intercom IP streams.
- Add user assignable stream/channel source selection for incoming audio/intercom IP streams.
- Add support for remote control of A/I channel/source selection.
  Use Camera Connect **v1.69.0041 (CSB-24813)** for remote control.

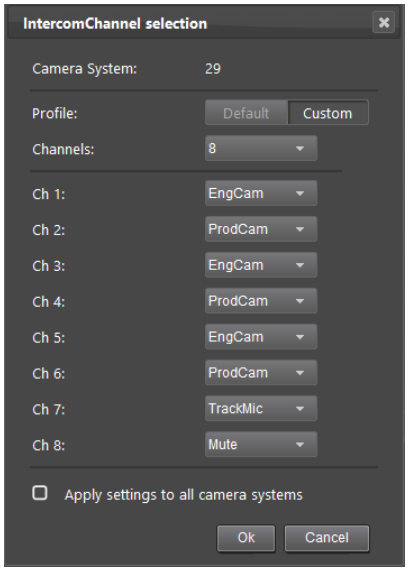
Note: For this new functionality a perpetual license "**Audio/Intercom Channel Assignment Option, perpetual"** is required.
Part nr. for this license is **9-0110000128-9**

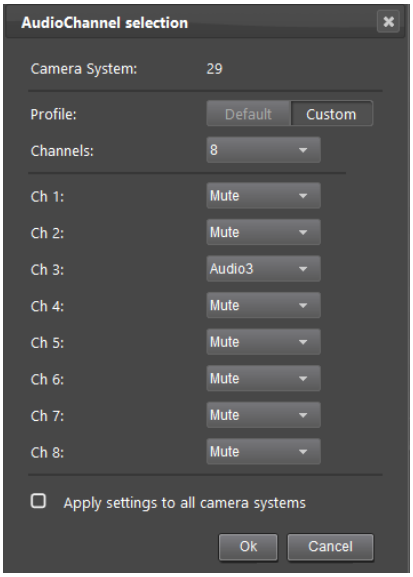
New IP Audio/Intercom output stream channel configuration pages



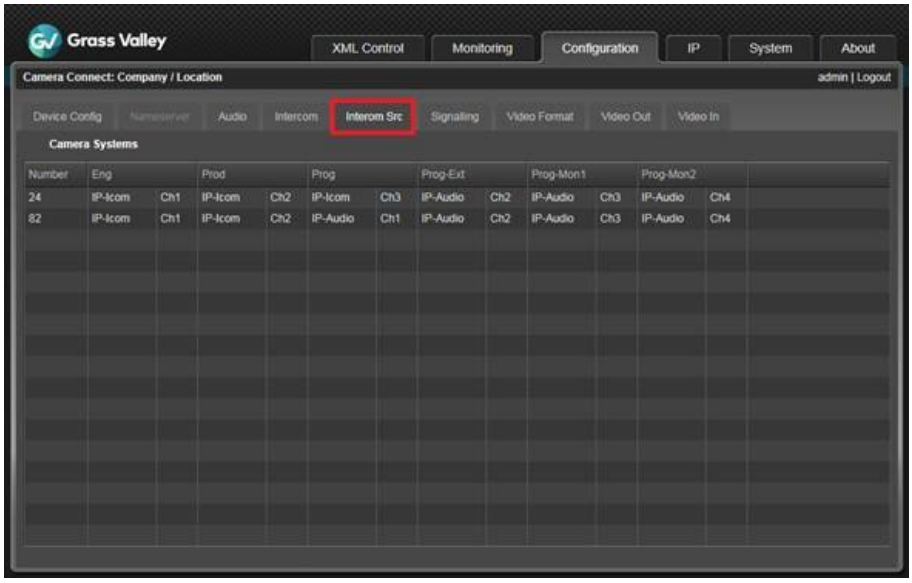
Audio/Intercom Channel selection dialog:

(Note: With checkbox it's possible to apply these selections to all cameras at once)

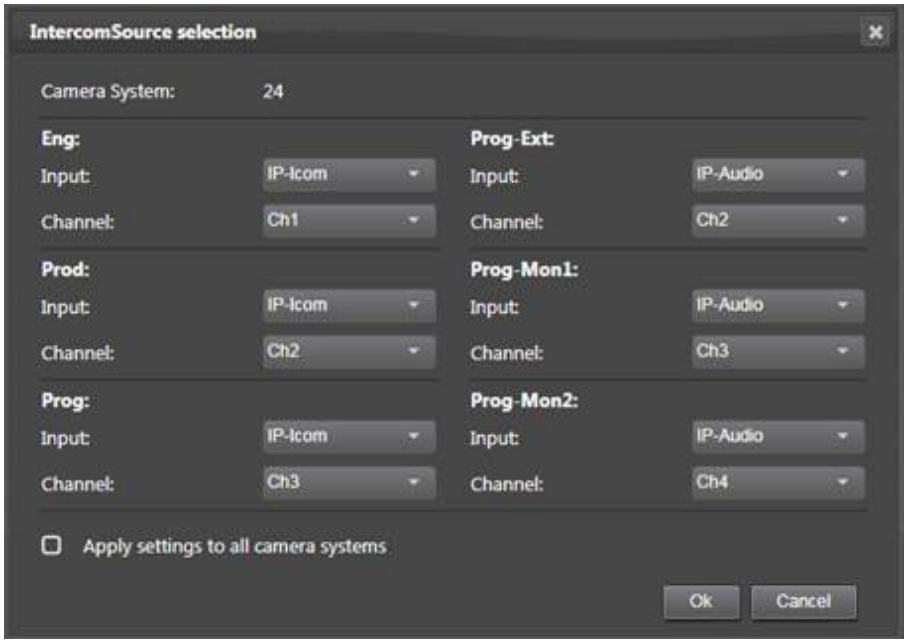




New Intercom Source selections:



Intercom Source selection dialog:



- Add Intercom VU levels diagnostics (cam to prod, cam to eng, eng in, prod in, progr in, prog-ext in, prog-mon1 in, prog-mon2 in).
  “Diagnostics” > “Intercom”.
- Live video can be switched between 1080p and 1080i in high speed UHD
  “Installation” > “Signals” > “Destination” > “Live Video”
- Add control to switch off the front volume pot meter.
  “Operator Toolbox” > “Intercom” > “Front Vol. Ctrl.”
- Possibility to select the VF signal BNC (E) to “VF” (1080P) and “VF 1080i” (1080i).
  “Installation” > “Signals” > “Destinations” > “SDI” > “BNC E”
- Make the selection list for the left/right handgrip buttons equal.
  “Operator Toolbox” > “User Buttons” > “Handgrip”
- The Audio Source indicators on the back panel of the camera will only lit when the information button is pressed.
- Zoom/Focus indicator range from “00” to “99” in changed to “000” to “999”.
- Default Side tone level changed from “75” to “30”

Problems solved:

- Video mode detected on BNC-D input not copied to IP stream metadata
  For now only 3G-sdi (1080p) and 1.5G-sdi (1080i) is supported.
  If you select ST2022-6 as IP standard, and you choose the “native”mode for EXT-SDI, all ancillary data and SDI embedded audio will be included in the stream.
  When 2110-20 is selected, only additional video stream, no additional audio stream (2110-30)
- Improve info 3 page and sound level indicators in XCU mode.
- Diagnostics Tx/Rx Mbps is missing in XCU mode.
- SDI ext video output has no ST352 VPID when set to scaled mode.
- SDI input as source for Live aux IP stream is not restored after power up.
- Lens indications (Iris, Focus, Zoom) sometimes no longer get updated.
- Source-ip address back to 255.255.255.255 in SDP is resolved.
- For LDX 100 only: Discoloration of the last lines in the picture resolved.
- Stuttering Remote zoom functionality improved.

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Overall Note:

- Support VLAN tagging via the 1Gbps Ethernet trunk from the camera to a media network. See page 2, 3 and 4 for detailed information.

  (Current behavior of the trunk is that only non-tagged incoming packets are used in the trunk interface to allow the camera to add VLAN tags to the header of the non-tagged packets.)

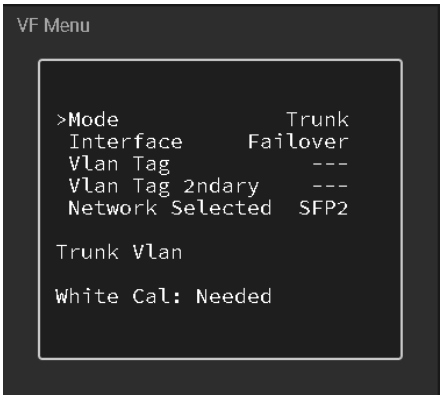
- REST-API control for C2IP nameserver IP configuration.
  For detailed information see the appendix “CAMERAS-LDX100seriesRESTAPI.PDF”

- **LDX100 / LDX150 RJ45 VLAN Trunk description**

  Short description for configuring the RJ45 Trunk VLAN configuration of the LDX100 and LDX150.

- **Configuration using camera menu**

  In the menu, go to Installation -> Network Setup -> Vlan -> Trunk Vlan



- Mode [Off | Trunk | Access]

- **Off:**
  No traffic to/from the RJ45 trunk connector.

Trunk:
All VLAN tagged traffic on the SFP ports is routed to the RJ45 trunk port and all packets are VLAN tagged.
An external Ethernet switch is connected to the trunk port to split the VLANs and provide untagged Ethernet ports for the various VLANs.
All packets to the RJ45 port should be VLAN tagged.
Untagged packets are blocked.
There is an exception: the VLAN ID that is configured for C2IP will not be sent to the trunk RJ45.

Access:
VLAN tagged traffic of one specified VLAN is routed to the RJ45 trunk port. All packets are untagged.
All packets to the RJ45 port should be untagged.
VLAN Tagged packets are blocked.

Interface [SFP1 | SFP2 | Failover]

Failover
Failover automatically selects the SFP interface that is used for receiving/sending the packets to/from the trunk ethernet port.
The selection is based on the Ethernet link status.
The selection will only change when the current selected interface goes down.

SFP1
Forces to use the SFP1 interface, regardless of the link status.

SFP2
Forces to use the SFP2 interface, regardless of the link status.

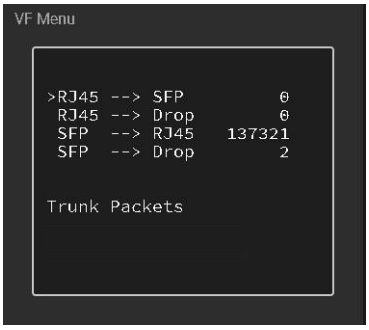
Vlan Tag
Sets the VLAN Tag ID to be used in access mode for the SFP1 interface.

Vlan Tag 2ndary
Sets the VLAN Tag ID to be used in access mode for the SFP2 interface.

Network Selected [SFP1 | SFP2]
Shows the currently selected interface as diagnostic.

<u>Diagnostics using the camera menu</u>

Diagnostics -> Media Network -> Vlan -> Trunk packets



RJ45 ➔ SFP
Number of packets received on the RJ45 port and sent to the SFP media network.

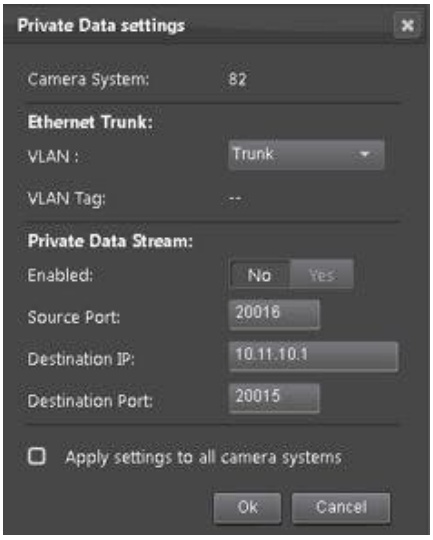
RJ45 -> Drop
Number of packets received on the RJ45 port but dropped because the packets were tagged (access mode) or untagged (trunk mode)

SFP -> RJ45
Number of packets received on the SFP port and sent to the RJ45 trunk Ethernet port based on the VLAN tag.

SFP -> Drop
Number of packets that should be sent to the RJ45 port because the VLAN configuration matches, but are dropped because of bandwidth overflow. Because the internal buffering of packets in the camera is limited, the peak bitrate should not exceed the RJ45 connection bandwidth (1G, 100Mbit or 10Mbit depending on the link speed). Configuring a bandwidth limitation per VLAN in the network switch connected to the SFP interface may be required for high bandwidth applications.

Configuration using Camera connect

Open the camera connect web interface
Go to the tab IP -> Private data.



With version 1.68 of the camera connect not all settings are available. Currently only the mode (Off / Trunk / Access) can be set and the primary VLAN tag.
More options will be added in later versions.

Remarks

The Ethernet trunk is in access and trunk mode behave like a transparent wire, except for the filtering on VLAN ID and adding/removing the VLAN tags. So this is different than a typical switch or router and there is no additional configuration required.

The controls are part of the Media files and can be stored and recalled in the camera and with an USB flash drive.

Further New functionality:

- Allow mDNS and DNS-SD on media network.
- UHD video can be used as SDR video.
- Implement HDR2SDR Input Mode
- Support for NMOS IS-09

Problems solved:

- NMOS Connection to MQTT server was not remembered.
- IS07: Cannot subscribe tally event multiple times to a MQTT topic.
- Diagnostics was missing for Rx media streams when only secondary stream is active.
- NMOS static configuration on media network with redundancy is not ok
- Amwa NMOS DNS-SD service discovery only works on eth0 (C2IP).
- NMOS resources contain incorrect url
- It was not able to ping media interfaces from same subnet.
- Failover of PTP locking during power up while PTP slave is in calibrating might cause excessive audio/video RTP time stamp offsets w.r.t. the PTP clock (indicating audio/video of about 5 hours)
- The HDR output level control influences the SDR output level.
- HDR black offset used in SDR for Main (UHD) and Phases outputs
- UHD SDR color space output not correct.
- Vertical detail is active on HDR - Main and Live in 1080p150 mode
- Cannot ping media interfaces from same subnet
- Stream attributes missing in SDP file when in JpXs mode:
  PM=2110GPM; SSN=ST2110-22:2019
- SXP software code number and version not visible in VF menu
- The audio receiver did not accept a Packet time of 0.12 (a=ptime:0.12) in SDP file. According to the AES67 standard 0.12 is a legal value for a package time of 125uS
- When DCHP is used on Eth0, the system must wait for server supplied IP.
- When changing Fx Filter to 4P star, VF message says SoftFocus and vv
  1G Ethernet tunnel diagnostics is missing in Native IP mode

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- **Overall Note:**

  - After package installation Black calibrations are needed in all video modes.
  - This will be shown in the viewfinder as: “Black Cal. Needed.”
  - In the camera VF menu go to “Service” > “Calibrations” > “Black Calibr”.

New functionality:

- Implement Automatic Restoration of Illumination Attentuation (ARIA) for automatic white shading (if supported by the lens).
  This item can be found in the VF menu “Configuration” > “Lens” > “Lens Corrections”
- Support 1080i in nmos and IP.
- HDR to SDR conversion for 1080i and 1080P.
- Nmos controls in Camera Connect v1.65.0037. See also CSB 23554
- Nmos server info in diagnostics in Camera Connect and monitoring menu.
- LDX100 matches LDX86n when XGL Matrix is selected.
- Add control for Skin View in Main signal.
- VLAN and Private data settings available for CamConnect.
- C2IP network settings available for Camera Connect (display only).

- **Local Mode:**
- When there is no NativeIP license available, the camera is automatically set to XCU mode.
- This is not convenient if you want to use the camera as stand alone camera (with recorder or wireless box attached).
- For this specific applications the Local Mode is introduced.
- Behavior in this mode is the same as with the IP mode, but without the media interface.
- The local mode can be selected with the Installation > CameraMode function.

Problem solved:

- PTP locking unstable in one-step mode.
- Improved HDMI reliability at power up.