

FG4 MultiBox

Quick Start Guide, Version 6.0

Type of information: Public

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Change Log

Version	Date	Description	Changed by	Reviewed by
0.1	20. 10. 2023	First version for build223	RMC	
0.2	23. 05. 2024	Updated version for build234	RMC	
1.0	13. 06. 2024	Updated version for FW 1.0	RMC	
3.0	16. 04. 2024	Updated version for FW 3.0	RMC	
6.0	27. 01. 2026	Updated version for FW 6.0 New DQ template	RMC	

1 Overview

The FG4 MultiBox system consists of the FG4 MultiBox, FG4 PCIe Card(s), and Interface module.



(a) FG4 MultiBox



(b) FG4 PCIe Card



(c) FG4 Interface Module

Figure 1: FG4 MultiBox system overview

2 Power

2.1 Connection to power supply

Use the included power cable to connect to the power supply or to your test bench sockets with banana plugs.



Figure 2: Power cable

2.2 Power consumption and power supply requirements

The input voltage range is 10 to 30 Volts DC. The recommended power supply is 12 V / 8 A. For detailed information see "Power supply" chapter in the main [user manual](#).

2.3 Powering ON / OFF

To turn on or off the Box, short-press the ON / OFF button.

2.4 LED Status

Table 1: Basic color signals

LED Color	Meaning
Orange	Booting
Yellow	Checking / updating card firmware
Green	Normally running
Red	Error (app not running)
Dimmed blue	Standby (CAN Active)
Off	Off

Normally after pressing the ON / OFF button, the device's LED power-on sequence includes an orange light, followed by two yellow flashes, and then a solid green light. The device takes approximately 25 seconds to start up. For detailed information see "Power button LED" chapter in the main [user manual](#).

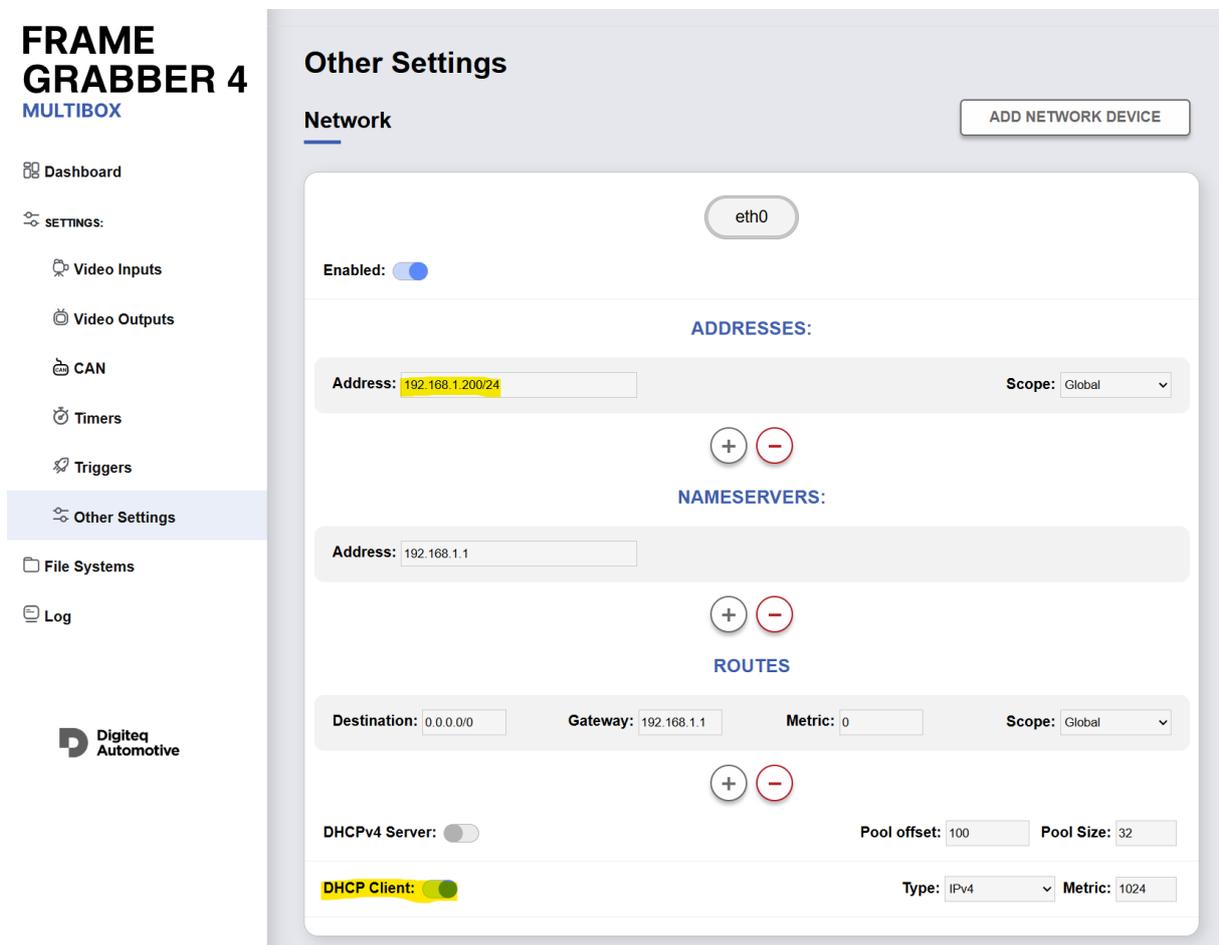
3 Ethernet connection

3.1 Default IP address

The default IP address of the web user interface is <http://192.168.1.200>.

3.2 IP address and DHCP setup

Open the web UI, go to “Other Settings” and change the “eth0” IP address to the desired value (e.g. 192.168.4.200). Enable “DHCP Client” for automatic IP assignment if needed. The “eth0” address must be in the same range as your DHCP server.



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MULTIBOX

Dashboard

SETTINGS:

- Video Inputs
- Video Outputs
- CAN
- Timers
- Triggers
- Other Settings**
- File Systems
- Log

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Other Settings

Network ADD NETWORK DEVICE

eth0

Enabled:

ADDRESSES:

Address: Scope:

NAMESERVERS:

Address:

ROUTES

Destination: Gateway: Metric: Scope:

DHCPv4 Server:

Pool offset: Pool Size:

DHCP Client: Type: Metric:

Figure 3: Network settings

4 Dashboard (Web UI)

The dashboard is the main page of the web user interface. Its primary sections are described below.

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Dashboard
16. 1. 2026 13:44:09 GMT+1

Finware version: 6.0
CPU temperature: 39 °C
Serial number: 010-001-001-001

CPU: 6%

RAM: 687 / 7859 MiB

Connected Hardware:

- FPD LINK 3**
S/N: 001-003-001-023
SLOT 1
IN1: ABT SOURCE, OUT1: ABT OUTPUT, IN2: iID SOURCE, OUT2: iID OUTPUT
Recording ABT SOURCE
- GMSL VAR1**
S/N: 001-031-004-112
SLOT 3
IN1: PID, OUT1: , IN2: , OUT2: CID
- GMSL VAR3**
S/N: 002-031-002-024
SLOT 5
IN1: FID, IN2: arHUD
- ETH0 UP**
192.168.1.200/24
fe80::4ab0:2dff:fe48:d0a1/64
- MMCBK2P1 MY_SD_CARD**
Used: 0/14GiB
UNMOUNT
- SDA1 SATADISK**
Used: 0/457GiB
UNMOUNT
- SDB1 MY_USB_DISK**
Used: 1/28GiB
UNMOUNT

Figure 4: Dashboard page

4.1 Connected Hardware

- The installed PCIe cards, module types, and their current Input/Output status
- Ethernet device(s) status (current IP address)
- Mounted storage devices

4.2 Detected Hardware

- Storage devices available for mounting

4.3 How to

- Short hints with ("Learn More") [link to the user manual](#)

5 Video Inputs

In this section, configure the parameters for video inputs. The displayed settings depend on the installed interface module type.

If the input is enabled, the video signal is received from the FG4 PCIe Card for further processing in the FG4 MultiBox.

5.1 Input Status

Shows detected parameters of the incoming video signal.

5.2 Interface Settings

5.2.1 FPD-Link III

Configure input video signal parameters to match your signal source.

Figure 5: Interface settings – FPD-Link III

Frequency range – set according to the detected PCLK frequency. If OLDI Line Width is “Single”, use the PCLK frequency as is. If OLDI Line Width is “Dual”, divide the detected frequency by 2.

Example: Detected PCLK is 70123 kHz (70 MHz). Set to over 50 MHz if OLDI Line Width is single. Set to under 50 MHz if OLDI Line Width is dual.

5.2.2 GMSL 2/3

Configure the input video signal parameters to match your signal source. Ensure that the basic GMSL parameters, such as “GMSL FEC” and “GMSL Mode,” are correctly set for proper video decoding.

For GMSL 3, the mode should be set to 12 Gb/s with FEC enabled. For GMSL 2, the mode should be set to 6 Gb/s with FEC disabled.

Figure 6: Interface settings – GMSL 2/3 var1

For the “GMSL 2/3 Interface variant 1”, ensure that the parameters for both inputs IN1 and IN2 are identical, except for the Stream ID value. The daisy-chain output will not function if the parameters do not match.

For the “GMSL 2/3 Interface variant 3”, inputs IN1 and IN2 operate independently. DCH1 output corresponds to IN1, and DCH2 output corresponds to IN2.

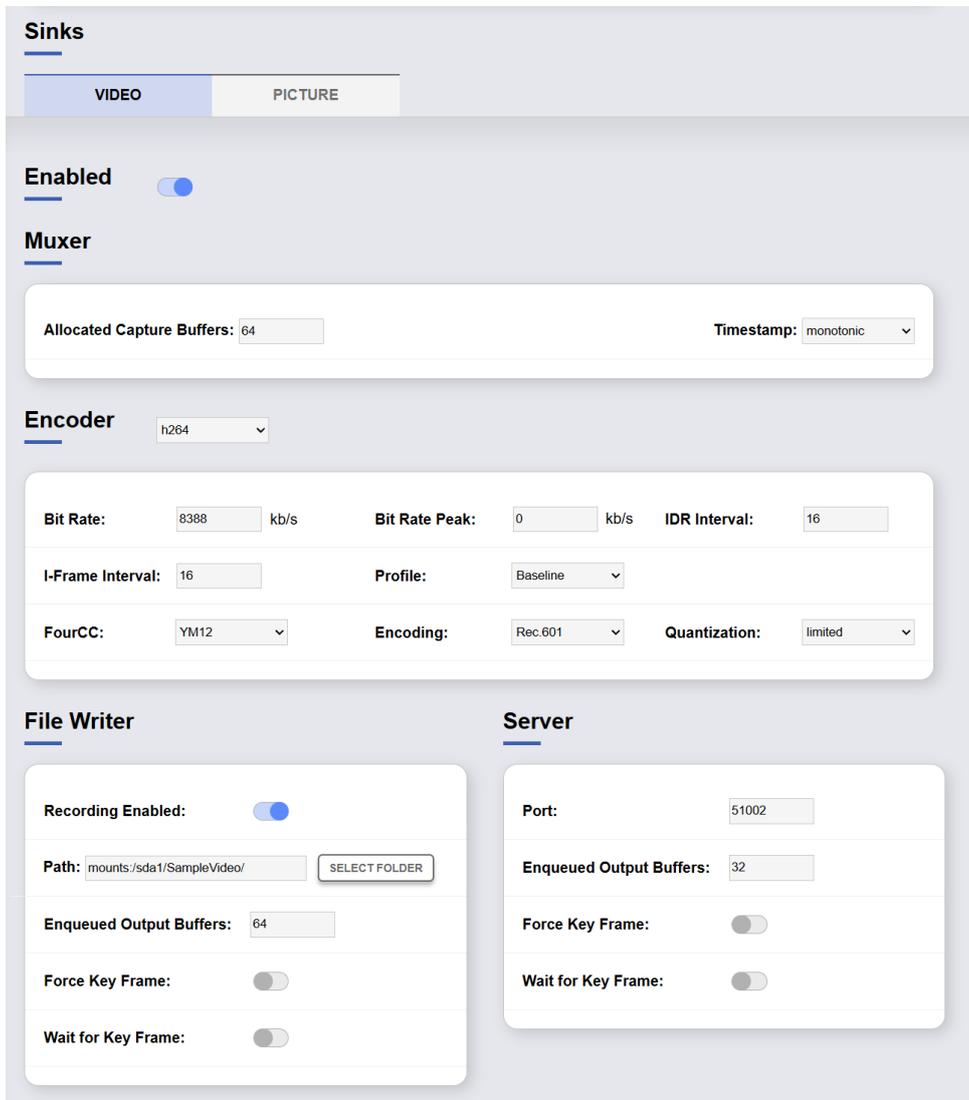
5.3 Sinks

For each video input, there are two “sinks” available:

- VIDEO – Sends a video stream via the TCP port and optionally saves it to a file.
- PICTURE – Takes a screenshot, sends it via the TCP port and optionally saves it to a file.

5.3.1 Video

Enable this feature to send a video over the TCP port as a Video Transport Stream or to save it to the internal storage (SATADISK).



Sinks

VIDEO PICTURE

Enabled

Muxer

Allocated Capture Buffers: 64 Timestamp: monotonic

Encoder h264

Bit Rate: 8388 kb/s Bit Rate Peak: 0 kb/s IDR Interval: 16

I-Frame Interval: 16 Profile: Baseline

FourCC: YM12 Encoding: Rec.601 Quantization: limited

File Writer

Recording Enabled:

Path: /mnt/sda1/SampleVideo/

Enqueued Output Buffers: 64

Force Key Frame:

Wait for Key Frame:

Server

Port: 51002

Enqueued Output Buffers: 32

Force Key Frame:

Wait for Key Frame:

Figure 7: Video Sink

To begin recording the video, turn on the “File Writer” and click “Update Settings.”

To stop the recording, switch off the “File Writer” and click “Update Settings” again.

The recorded video file, with the extension *.ts, will be saved in the path you selected and can be accessed from the “File Systems” section in the main menu.

The TCP Video Transport Stream can be played on a computer within the same LAN network using software like VLC player. To play the stream in VLC, follow these steps:

1. Click on “Open Network Stream,”
2. Enter the network URL in the format for example: “tcp://192.168.1.200:51008”.
3. Press Play

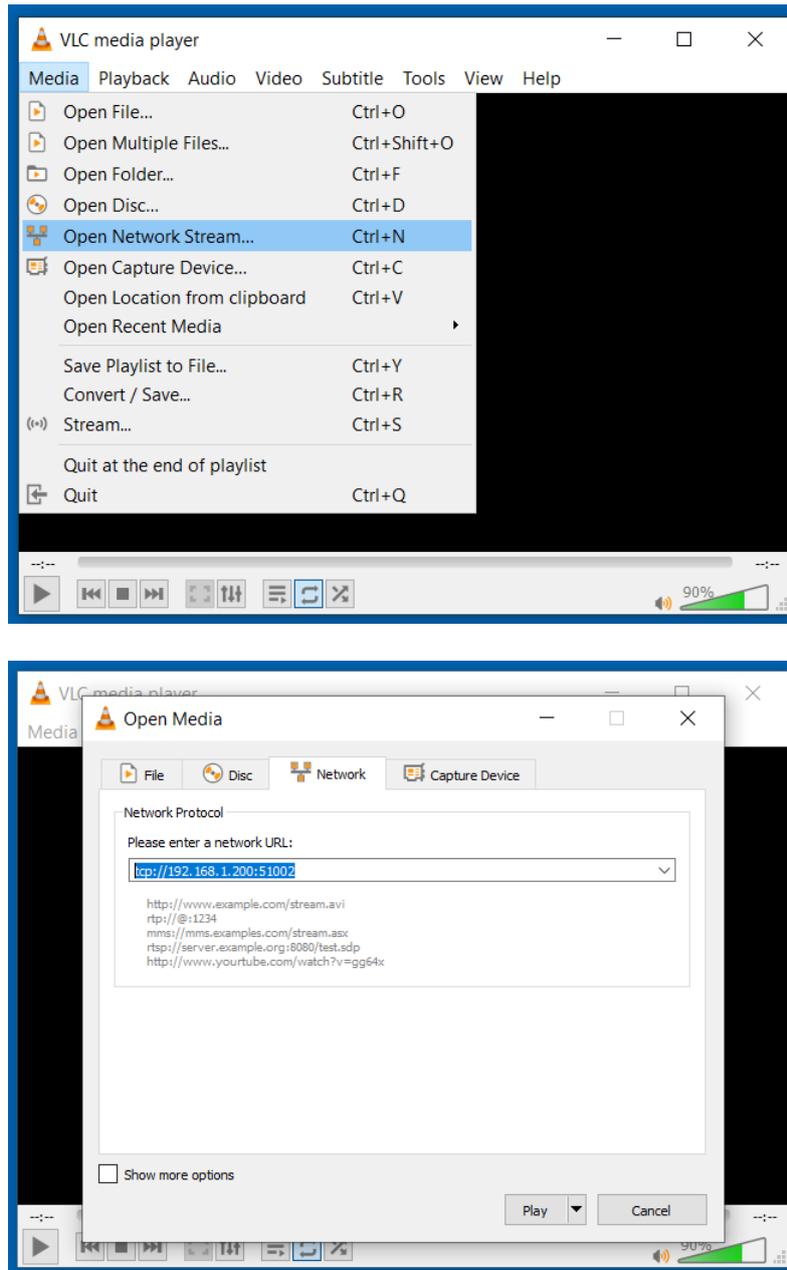


Figure 8: Opening Network Stream in VLC Player

5.3.2 Picture

Enable this feature to capture the images (.png) from FG4 input.

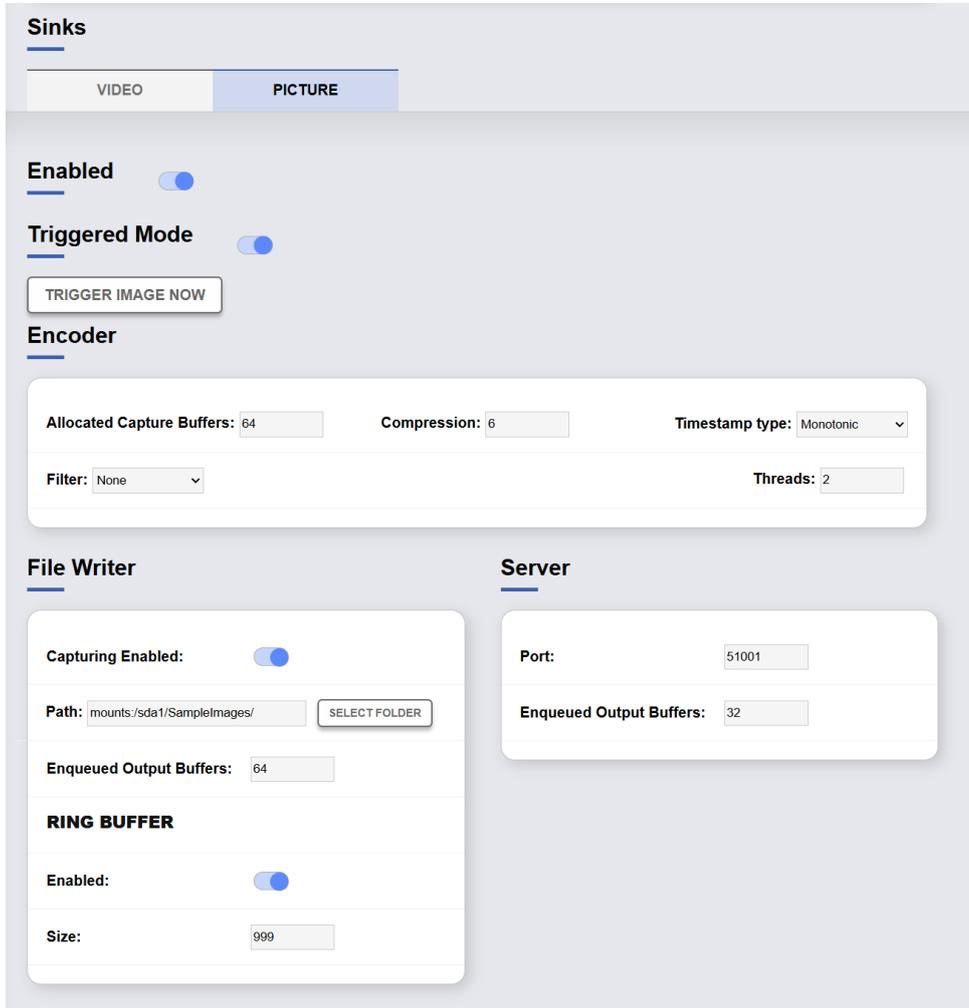


Figure 9: Picture Sink

In triggered mode, a single image is captured only if the “Trigger Image” event occurs or if the “Trigger Image Now” button is pressed.

If not in Triggered mode, the images will be captured continuously. For example, at 60 fps, 60 images per second will be processed.

If the Images are to be saved, enable the “Capturing Enabled” in the “File Writer” section and select a path.

If the Ring Buffer is enabled, the number of stored image files will be limited to the specified amount. The oldest files will be overwritten by new ones.

The last processed image could be get via TCP port, specified at the “Server” section.

6 Video Outputs

In this section, configure the parameters for video outputs. The displayed settings depend on the installed module type.

6.1 FPD-Link III

Specify the desired FPD-Link 3 output signal parameters.

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Dashboard

SETTINGS:

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Video Outputs

● **ABT OUTPUT** (SLOT 1 / OUT 1) ● IID OUTPUT (SLOT 1 / OUT 2) ● SLOT 3 / OUT 1 ● SLOT 3 / OUT 2

Custom Name:

DEVICE NAME: fg4_001-003-001-023_o0
CARD S/N: 001-003-001-023

FPD-Link III

Display Width: Display Height: Frame Rate Limit:

Video Source: PCLK Frequency:

HSync Polarity: VSync Polarity:

HSync Width: VSync Width:

HBack Porch: VBack Porch:

HFront Porch: VFront Porch:

FPD3 Output Width:

Signal Generator

Send to FG4 Output

Source:

Pattern: Frame Rate: / Size x: y:

Figure 10: Output Interface settings – FPD-Link III

To use the same output parameters as detected on input, click the “Import Settings” button to retrieve signal parameters from IN1 or IN2.

6.2 GMSL 2/3

6.2.1 Interface module “GMSL 2/3 variant 1”

As the output back to the display(s) use the Daisy Chain output, marked as “DCH1” on the interface module, instead of outputs “OUT1” or “OUT2”.

Note: The separate GMSL 2/3 Outputs “OUT1” and “OUT2” are currently not implemented yet.

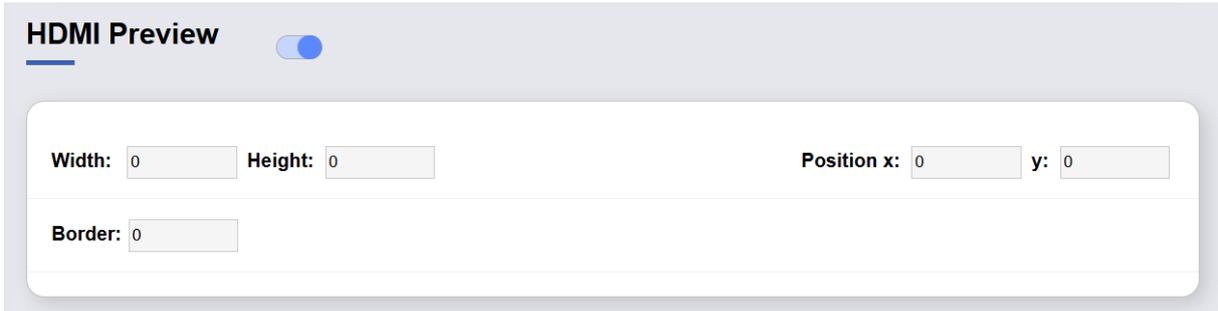
6.2.2 Interface module “GMSL 2/3 variant 3”

As the output back to the display(s), use the Daisy Chain output, marked as “DCH1” for IN1 or “DCH2” for IN2.

7 HDMI Preview

The HDMI Preview function allows video to be sent directly to the monitor screen. It is available for both "Video Input" and "Video output".

- For Video Input, the HDMI Preview displays the captured input signal on the monitor.
- For Video Output, the HDMI Preview sends the signal from the native signal generator ("Generator OUT1" for OUT1 or "Generator OUT2" for OUT2) to the monitor.



HDMI Preview

Width: Height: Position x: y:

Border:

Figure 11: HDMI Preview settings

You can set the size and position of each preview. This is especially useful when multiple previews are enabled.

- If both the Width and Height values are set to **0**, the preview is displayed in fullscreen mode.
- If both the Width and Height values are set to **1**, the preview matches the size of the original frame.

8 File Systems

Access to the mounted storage devices or upload firmware update files.

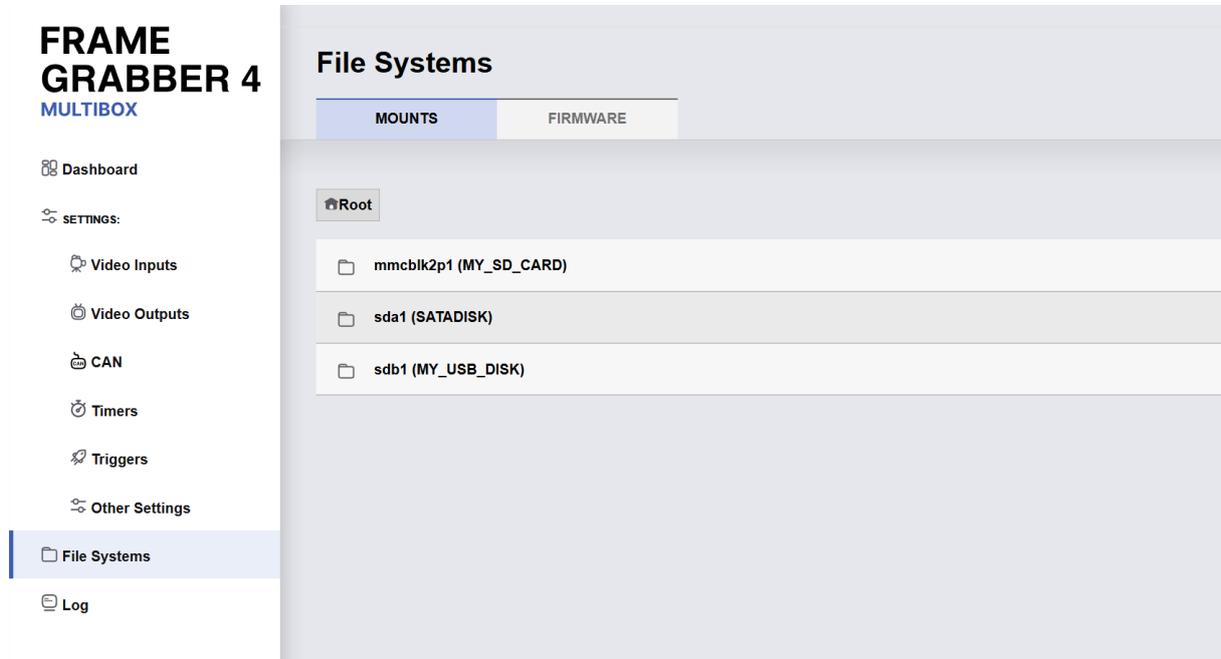


Figure 12: File Systems

8.1 SATA Disk

The FG4 MultiBox includes a 500 GB SATA disk for storing videos and images. It is mounted in the file system as device "sda1" and labeled as "SATADISK."

9 Configuration backup and restore

To backup all configuration settings, navigate to “Other Settings” and go to the “Config Operation” section of the page. You can then save the current configuration to a file or load the configuration from a previously saved file.

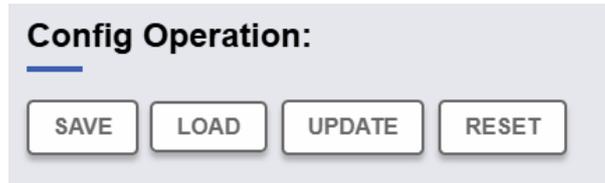


Figure 13: Config Operation



Warning

Configurations saved in a newer firmware version cannot be uploaded to a FG4 MultiBox running an older firmware version; however, configurations from older versions can be uploaded successfully.

10 Firmware update

First, download the “mgb4-install*.tgz” file from the [product website](#).

To update the firmware, go to the “File Systems” section, choose “Firmware”, and click the “UPLOAD FILE” button. Then, upload the downloaded “mgb4-install*.tgz” file.

To force firmware flashing after reboot, create the “mgb4-flash” flag file. To keep the configuration, create the “mgb4-keep” file. Otherwise, the device will be reset to default settings.



Please save your configuration before updating the firmware to avoid possible loss of settings.

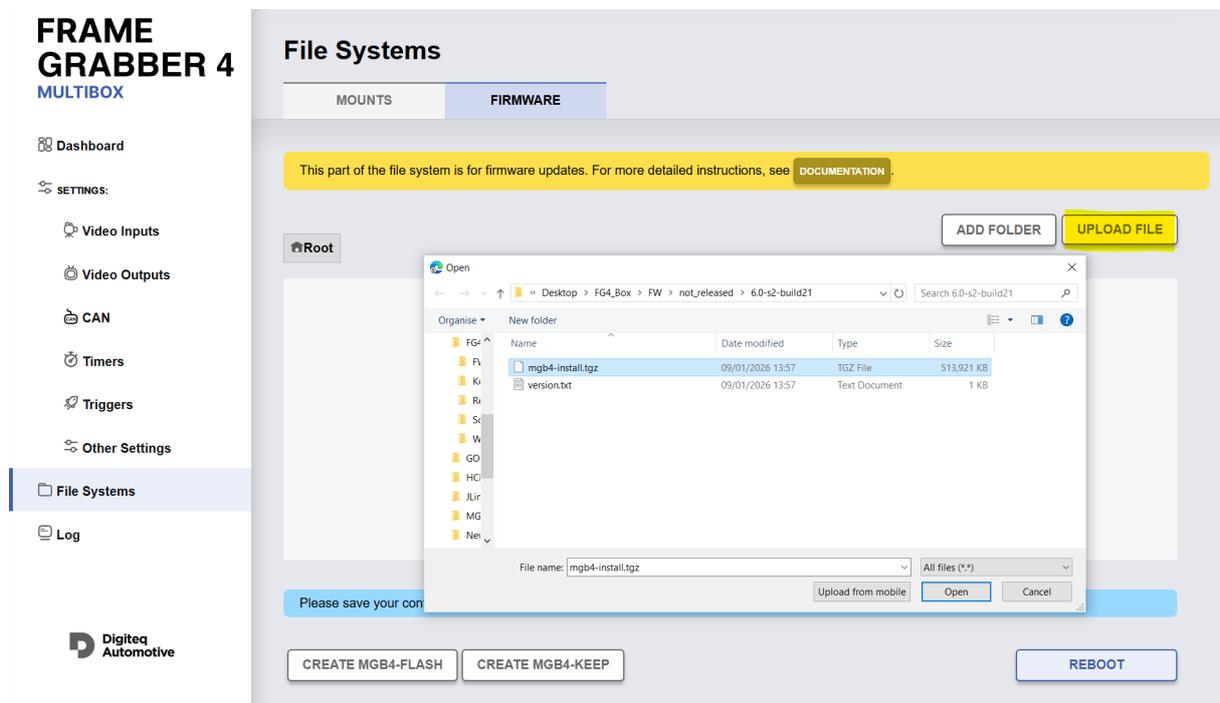


Figure 14: Uploading firmware files

To initiate the update, press the “REBOOT” button after uploading the files (see Figure 15).

FRAME GRABBER 4

MULTIBOX

- Dashboard
- SETTINGS:
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File Systems

MOUNTS | **FIRMWARE**

This part of the file system is for firmware updates. For more detailed instructions, see [DOCUMENTATION](#).

ADD FOLDER | UPLOAD FILE

Root

mgb4-flash	Fri, 16 Jan 2026 13:09:58 GMT	0 Bytes	↓	🔗	🗑️
mgb4-install.tgz	Fri, 16 Jan 2026 13:09:56 GMT	501.88 MiB	↓	🔗	🗑️
mgb4-keep	Fri, 16 Jan 2026 13:09:59 GMT	0 Bytes	↓	🔗	🗑️

Please save your configuration before updating the firmware to avoid possible loss of settings.

REMOVE MGB4-FLASH | REMOVE MGB4-KEEP | **REBOOT**

Figure 15: REBOOT button

11 Support Contact

If you encounter any issues or have questions, please contact us.

E-mail: support.products@digiteqautomotive.com

Website: https://products.digiteqautomotive.com/fg4_multibox/