FantoVision40 Family
Getting Started User Guide

.

November 2025

Gidel products and their generated products are not designed, intended, authorized, or warranted to be suitable for use in life-support applications, devices or systems or other critical applications.

FantoVision40 Family Getting Started Guide

Contents

1 Introduction

1.1 Overview

Gidel's FantoVision40™ is a family of compact computers enabling image acquisition and processing from CoaXPress, 10GigE Vision, and Camera Link cameras. The FantoVision's architecture merges high-end image acquisition with real-time image processing and/or compression using Nvidia Jetson™ embedded computer with optional pre-processing/compression on Intel Arria 10™ FPGA. The Jetson Orin NX can process up to 100 TOPS(INT8) AI using Nvidia's comprehensive libraries. The GPU and FPGA interconnect via 4-lane PCIe capable of grabbing more than 3GB/s. With optional up to 2 Tera Byte SSD, the system can perform demanding real-time processing, compression, transmitting to the cloud, and recording. The FPGA is fortified with up to 10 GB DDR4 at 25 GB/s.

1.2 Models

The FantoVision40 family is offered with a variety of options as detailed below.

The models are **FV[A][B][C][D][E][F]** according to the following table:

A - base model	B - CPU	C - FPGA	D - Cooling	E - Environment Options	F- Storage
40CXP – 4 x CXP12 **40GV** – 4 x 10 GigE **40** – 4 x CXP12 + 4 x 10 GigE For **10 GigE** availability, refer to note (1) below.	**ORM**- Orin NX-16GB * Other Orin options are valid for quantity > 100 **ORN** – Orin Nano NX (subject to MOQ)	**16** - Arria10 160 + 2GB **164** - Arria10 160 + 4GB **272** - Arria10 270 + 2GB **27** - Arria10 270 + 10GB **66** - Arria10 660 + 9GB	**A** - Active cooling **Blank** - passive cooling	**Blank** - No option **R** - Extended vibration resistance **I** - Ambient temperature starting from -25C. This option includes the R option. Refer to note (2) below.	**Blank** - 100GB+. **-x** - xTB Refer to note (3) below.

Notes:

1. For availability of FantoVision40 and FantoVision40GV, contact Gidel.
2. Gidel also offers the FantoVision20 family supporting both GigE Vision (2 x 10 GigE) and Camera Link. For more information, refer to the FantoVision 20 documents or contact Gidel.
3. The **I** option is only available with Arria 270 and 4 GB on bank A. If you need the **I** version with Bank B as well, contact Gidel Sales.
4. Storage option is 2TB (1920GB). For larger storage contact Gidel

For additional or custom FantoVision models, please contact Gidel.

1.3   Reference Documentation

All Gidel documentation listed in the table below can be found in the following path:

/home/gidel/ssd/gidel/doc

| Document name	Comment
InfiniVision API Data Book	Describes Gidel's InfiniVision frame grabber API
ProcFG Data Book	Describes Gidel's ProcFG frame grabber API
CameraConfig Data Book	Describes Gidel's GenTL camera configuration application
InitCam API User Manual	Describes Gidel's GenTL camera configuration API
Global Regs - Grabber IO Control Data Book	Describes how to configure the FantoVision's I/O functionality
IP Scan API User Manual	Describes the Gidel IP Scan API that enables scanning the FPGA to determine what Gidel IPs are embedded in the current design.
PofLoader_ReadMe	Describes how to use the PofLoader to program new firmware.
IPScan_ReadMe	Describes how to use the IP Scan application to identify the firmware design programmed on the board.
Operating the Gidel Pattern Generator IP_ReadMe	Describes how to software configure the Pattern Generator IP to generate image patterns in the Gidel grabber's acquisition path.
Proc API Data Book	Describes Gidel's Board Driver and Application Driver global API methods.

1.4   Functional Block Diagram
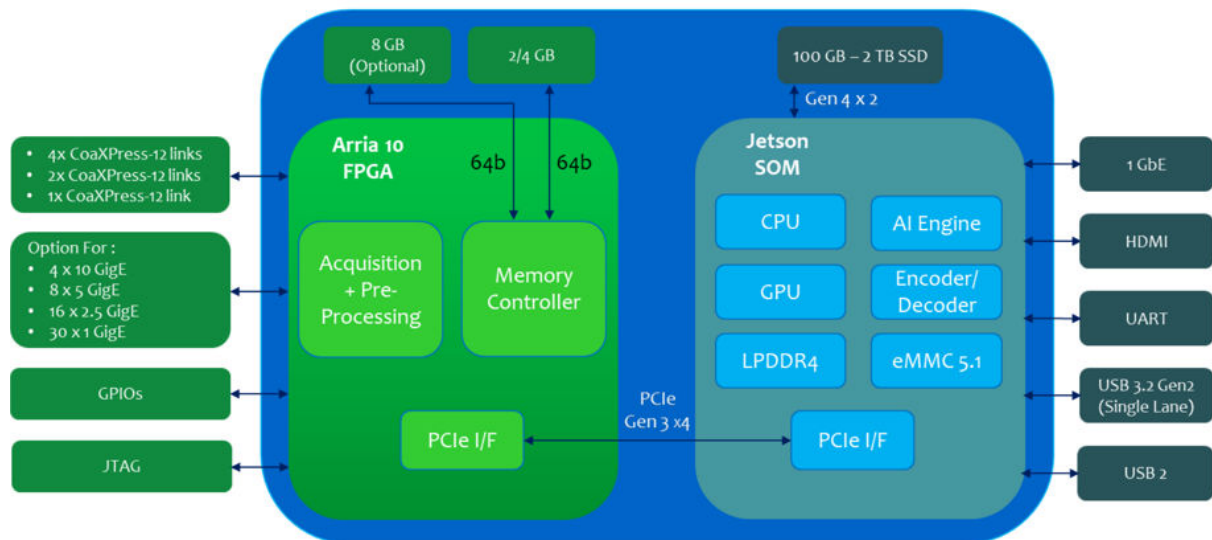
Figure 1: FantoVision40 Block Diagram

Notes:

1. The system comes with several FPGA firmware versions to support different cameras and system setups. For additional information, refer to **1.6.3**.
2. For customized FPGA firmware, user FPGA design customization, or SFP+ unique modules such as SFP+ to SDI, please contact Gidel Sales.

1.5 Frames Per Second (FPS) Limitation

The FantoVision's maximum DMA sustain throughput is ~3.3 GB/s thus limiting the maximum acquisition FPS respective to the frame size as detailed in the table below. The numbers listed in the table are the aggregate cameras' FPS. For example, 120 FPS may be due to one camera at 120 FPS, two cameras at 60 FPS, or 4 cameras at 30 FPS.

Table 1: Maximum Frames Per Second

Frames size	Max FPS
2MB	1,600
4K (~8MB)	400
20MB	165
8K (~33MB)	100
55MB	60
65MB	51
108MB	31

1.6 Familiarizing with the system

1.6.1 FantoVision40 Family Front Panel
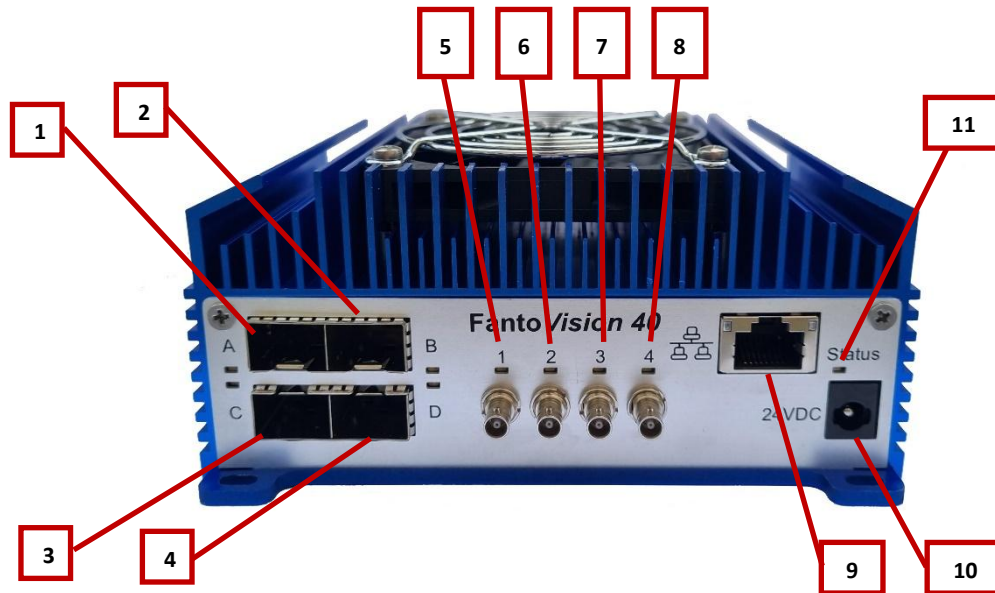
The following image shows the FantoVision40™ front panel:

Figure 2 FantoVision40 Front Panel

	Connector name	Description
1.	SFP+_A	Currently, not implemented in FantoVision40
2.	SFP+_B	Currently, not implemented in FantoVision40
3.	SFP+_C	Currently, not implemented in FantoVision40
4.	SFP+_D	Currently, not implemented in FantoVision40
5.	1 (CXP)	Micro-BNC connector supporting CXP-12
6.	2 (CXP)	Micro-BNC connector supporting CXP-12
7.	3 (CXP)	Micro-BNC connector supporting CXP-12
8.	4 (CXP)	Micro-BNC connector supporting CXP-12
9.	Network	Host's 1 GbE network connection
10.	24VDC	External power source connector (25W typical load @ 24V input voltage, 48W including CXP camera power over) *
11.	Status LED	Indicated FantoVision power status (refer to Table 3)

Table 2: Front Panel Description

*24V (+/- 8%, (+)Inner contact) and must not be shielded. A recommended power supply is: TRH100A240 (CINCON)

	Led state	Description
1.	Off	No power to the FantoVision.
2.	Steady green	Power on - all power planes are good.
3.	Blinking green	Jetson periphery power is disabled.
4.	Red	A power-down sequence was executed following an error detected in power tree.
5.	Blinking red	Main current is too high. Upon detection, after 1 second the Jetson periphery is disabled, and after 3 seconds the Jetson module shuts down.
6.	Orange	Main power failed. After a few seconds, the LED will display a constant red.

Table 3 Status LED modes

1.6.2 Rear Panel connectors

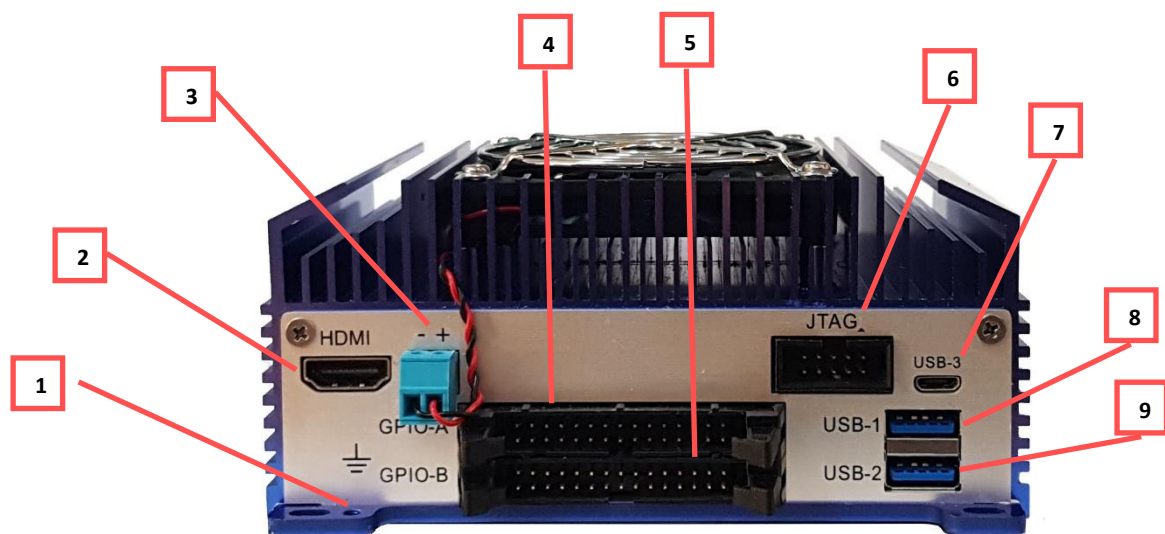The following image shows the FantoVision40 family rear panel:

Figure 3 FantoVision40 Rear Panel

	Connector name	Description
1.	Ground (GND)	Screw hole for grounding the FantoVision*
2.	HDMI	Host's HDMI connector for monitor display
3.	Fan power (optional)	Fan power supply **
4.	GPIO-A	System general purpose I/Os. For additional information, refer to section 1.6.4.
5.	GPIO-B	System general purpose I/Os. For additional information, refer to section 1.6.4.
6.	JTAG	JTAG connector for debugging the FPGA
7.	USB-3	USB serial connection. For additional information on remote connection, refer to section 0.
8.	USB-1	USB 2.0 connection to host
9.	USB-2	USB 3.2 Gen 2 (Single Lane)

Table 4: Rear Panel Connector Description

* When mounting a grounding screw, the coat of paint on the hole should be removed (scratched) for the screw to contact the chassis.

**The fan power is 12 V with a maximum current of 1.0A aggregate, utilized by the 12V GPIO-A, 12V GPIO-B, and the 12 V external fan power. The default fan provided with the FantoVision active cooling models, requires up to 0.3 AFor more information refer to Table 11 and Table 12.

The mating connectors' specifications for the 24 VDC power, GPIOs, and fan power are detailed in the following table:

	Connector name	Mate Description	Part Number
1.	**24VDC**	DC Power Connectors 2.5 x 5.5 mm with locking mechanism	CUI Devices: PP-2555TL-M
2.	**Fan power***	2 Poles, Pluggable, 180° Insertion Entry, 3.81 Pitch, 28~16 (AWG), Terminal Block Connector	CUI Devices: TBP02P1-381-02BE
3.	**GPIO-A and GPIO-B**	IDC, 30-pin, 100mil (Plug on the FantoVision: Omron XG4A-3039-A)	Mating options -Omron: XG5 IDC family for discrete wires or XG4 for strain relief.

Table 5: GPIO and Fan Power Specifications

* The default fan provided with the FantoVision40 active cooling models requires up to 0.3 A. For FantoVision40 without a fan, you may use this connector to control your own external fan in a similar manner to connector 3 shown in Figure 3.

1.6.3   Firmware

The FantoVision40 firmware can be reprogrammed to support different frame grabbing configurations or to update the firmware. The table below details the firmware options. The firmware files can be found in the following folder: */ssd/gidel/firmware*. The *firmware* directory contains two sub-directories, **16** and **27**. You should select the folder according to your FantoVision40 model. If you have, for example, the FV40ORM16 model, you must use the firmware provided in folder 16. To reprogram the firmware, use the **PofLoader** utility in the *utils* folder. For explanation on using the **PofLoader**, refer to the ***PofLoader_ReadMe*** document.

Description of the firmware files in folder **16**:

	Firmware file	Description
1.	FV40_16_cxp_fg_1_camera_build_23.pof	Supports 1 camera using ProcFG
2.	FV40_16_cxp_fg_4_cameras_build_23.pof	Supports 1-4 cameras using ProcFG (with smaller buffer size per camera: 1GB for camera 1, 512MB for camera 2, and 256MB for cameras 3 and 4). This firmware does not support a single camera with 4 links of 12 G.
3.	FV40_16_cxp_iv_1_camera_build_23.pof	Supports 1 camera using InfiniVision
4.	FV40_16_cxp_4_iv_build_23.pof	Supports 2-4 cameras, each camera has a separate InfiniVision instance and therefore the cameras do not need to be synchronized.
5.	FV40_16_cxp_iv_4_cameras_build_23.pof	Supports 1-4 cameras using a single InfiniVision instance, and therefore, all cameras **must** be synchronized. This firmware does not support a single camera with 4 links of 12 G.

Table 6: Folder 16 firmware description

Description of the firmware files in folder **27**:

	Firmware file	Description
1.	FV40_27_cxp_fg_4_cameras_build_23.pof	Supports 1-4 cameras using ProcFG (with smaller buffer size per camera: 1GB for camera 1, 512MB for camera 2, and 256MB for cameras 3 and 4). not support a single camera with 4 links of 12 G.
2.	FV40_27_cxp_4_iv_build_23.pof	Supports 2-4 cameras, each camera has a separate InfiniVision instance and therefore the cameras do not need to be synchronized.
3.	FV40_24_cxp_iv_4_cameras_build_23.pof	Supports 1-4 cameras using a single InfiniVision instance, and therefore, all cameras **must** be synchronized. This firmware does not support a single camera with 4 links of 12 G

Table 7: Folder 27 firmware description

Note: for a single camera design, ProcFG or InfiniVision, that supports 4 x 12 G, contact Gidel.

1.6.4 GPIO-A and B Description

The FantoVision40 GPIOs are connected via the GPIO A and B connectors located in the FantoVision's rear panel. The following section provides a description of the system I/Os and their respective pinout.

1.6.4.1 Software Configurable I/Os

FantoVision40 has a number of software programmable I/Os enabling real-time IO functions such as encoders, start/stop grabbing, triggering, and software control. The I/O control is performed via the Global Regs IP. For additional information, refer to the ***Global Regs - Grabber IO Control Data Book.pdf.***

The configurable I/Os available are listed in the following table:

I/O	comment
RS-422 diff-pair inputs	<Input> Standard RS422 interface
Opto-Isolators	<Input> Reverse logic
Hi-drive output	<Open Collector Output> High-power driver
LVTTL GPIO	<Bi-Dir> Push/Pull, or Open-Collector 3.3V I/O. 5V tolerant (TTL compatible)

Table 8: Configurable FantoVision I/Os

1.6.4.2 Additional System I/Os

Additional FantoVision40 I/Os available include:

Type	Connectivity	comment
COM port	Jetson UART0 port.	Connects to /dev/**ttyTHS1**
Darlington common cathode	Connects to the Darlington's COM pin	The ULN2803ADWRG4 COM (see Table 10)
2x 12V source	Drawn from FantoVision 12V power rail	Maximum 1.0 A aggregate divided between 12 V GPIO-A/B and the 12V power for the external fan.*

Table 9: GPIOs Functionality

*The default fan provided with the FantoVision40 active cooling models, requires up to 0.3 A.
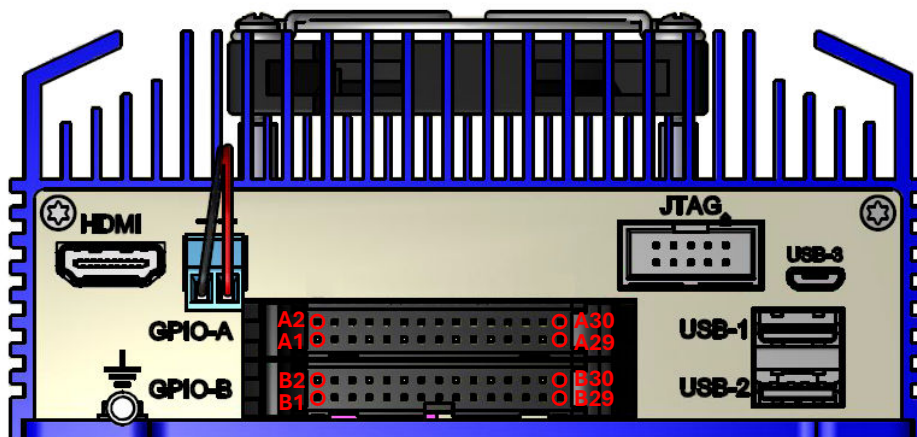
1.6.4.3 I/O Drivers' Devices

The External I/O connectors connect to the following devices:

Device	Manufacturer	P/N
RS-422 Receiver	Texas Instruments	AM26LV32CDR
Optocoupler	Broadcom	ACPL-064L-560E
Darlington Driver	Texas Instruments	ULN2803ADWRG4

Table 10: I/O Drivers-Receivers Devices

1.6.4.4 GPIO Pin Numbering

1.6.4.5 GPIO-A Pinout

| Pin #	Name	comment	Pin #	Name	comment
A1	**DNU**	Do not use	A2	**SHIELD**	Connects to chassis
A3	**RS422_IN[5]+**	Switching Rates Up to 32MHz. See note 1	A4	**RS422_IN[5]-**	Switching Rates Up to 32MHz. See note 1
A5	**RS422_IN[6]+**	Switching Rates Up to 32MHz. See note 1	A6	**RS422_IN[6]-**	Switching Rates Up to 32MHz. See note 1
A7	**RS422_IN[7]+**	Switching Rates Up to 32MHz. See note 1	A8	**RS422_IN[7]-**	Switching Rates Up to 32MHz. See note 1
A9	**RS422_IN[8]+**	Switching Rates Up to 32MHz. See note 1	A10	**RS422_IN[8]-**	Switching Rates Up to 32MHz. See note 1
A11	**Opt_IN[4] Cathode**	Opto-Isolator cathode input. See note 2	A12	**Opt_IN[4] Anode**	Opto-Isolator cathode input. See note 2
A13	**UART RX**	RS232 compatible	A14	**UART TX**	RS232 compatible
A15	**GND**	Digital ground	A16	**Reserved**	Do not use
A17	**Reserved**	Do not use	A18	**ext_io[6]**	TTL - 5V tolerant GPIO
A19	**Reserved**	Do not use	A20	**Reserved**	Do not use
A21	**GND**	Digital ground	A22	**Jetson Recovery**	Jetson FORCE_RECOVERY For information on recovering and cloning the Jetson image, contact Gidel.
A23	**Reserved**	Do not use	A24	**Reserved**	Do not use
A25	**Reserved**	Do not use	A26	**Reserved**	Do not use
A27	**EXT_RESET_IN**	External system reset. Active-low. See note 3	A28	**DNU**	Do not use
A29	**GND**	Digital ground	A30	**12V output**	Drives up to 1.0 A aggregated with pin B30 on GPIO-B and the 12V external fan power

Table 11: GPIO-A Pinout

1.6.4.6   GPIO-B pinout

| Pin #	Name	comment	Pin #	Name	comment
B1	**DNU**	Do not use	B2	**SHIELD**	Connects to chassis
B3	**RS422_IN[1]+**	Switching Rates Up to 32MHz. See note 1	B4	**RS422_IN[1]-**	Switching Rates Up to 32MHz. See note 1
B5	**RS422_IN[2]+**	Switching Rates Up to 32MHz. See note 1	B6	**RS422_IN[2]-**	Switching Rates Up to 32MHz. See note 1
B7	**RS422_IN[3]+**	Switching Rates Up to 32MHz. See note 1	B8	**RS422_IN[3]-**	Switching Rates Up to 32MHz. See note 1
B9	**RS422_IN[4]+**	Switching Rates Up to 32MHz. See note 1	B10	**RS422_IN[4]-**	Switching Rates Up to 32MHz. See note 1
B11	**Opt_IN[1] Cathode**	Opto-Isolator cathode input. See note 2	B12	**Opt_IN[1] Anode**	Opto-Isolator anode input. See note 2
B13	**Opt_IN[2] Cathode**	Opto-Isolator cathode input. See note 2	B14	**Opt_IN[2] Anode**	Opto-Isolator anode input. See note 2
B15	**Opt_IN[3] Cathode**	Opto-Isolator cathode input. See note 2	B16	**Opt_IN[3] Anode**	Opto-Isolator anode input. See note 2
B17	**ext_io[1]**	3.3 V LVTTL - 5V tolerant GPIO	B18	**ext_io[2]**	3.3 V LVTTL - 5V tolerant GPIO
B19	**ext_io[3]**	3.3 V LVTTL - 5V tolerant GPIO	B20	**ext_io[4]**	LVTTL - 5V tolerant GPIO (output only)
B21	**SHIELD**	Connects to chassis	B22	**hv_drv_common**	Common cathode node for High-drive outputs (required for inductive loads)
B23	**hv_drv_o[1]**	High drive output. See note 4.	B24	**hv_drv_o[2]**	High drive output. See note 4.
B25	**hv_drv_o[3]**	High drive output. See note 4.	B26	**hv_drv_o[4]**	High drive output. See note 4
B27	**hv_drv_o[5]**	High drive output. See note 4.	B28	**DNU**	Do not use
B29	**GND**	Digital ground	B30	**12V output**	Drives up to 1.0 A aggregated with pin A30 on GPIO-A and the 12V external fan power

Table 12: GPIO-B Pinout

Notes:

1. Standard RS422 interface. RS485 receiver with sensitivity of 200mV over (-7.0V to +7.0V) common mode range to allow transmission over up to 1200 meters. Internal pull-up and pull-down resistors prevent output oscillation on unused channels. Up to 10 receivers can be connected to a data bus for multi-drop applications.

2. The input voltage range is 3.3V – 24V.
   The optocoupler's operates as follows:
   - When cathode is open => opt_in[ ] = "High"
   - When cathode is GND => opt_in[ ] = "Low"

3. To initiate a reset, you need to ground pin A27. For that purpose, it is recommended to use pin A29.
   The EXT_RESET_IN signal operates as follows:
   a. Asserting it low for up to 3 seconds performs a soft reset.
   b. Asserting it low for 3 to 6 seconds performs a soft reset and an FPGA reset.
   c. Asserting it low for more than 6 seconds performs a system shutdown
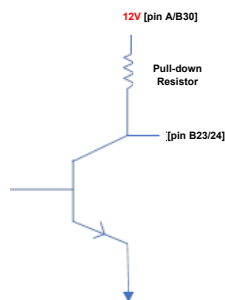
4. High power driver:

logic diagram
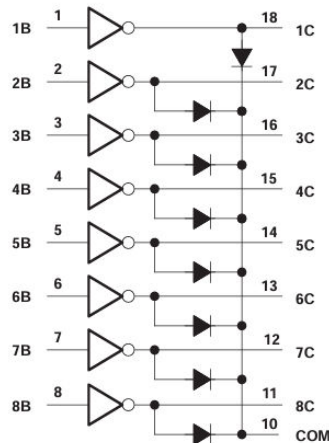
schematic (each Darlington pair)
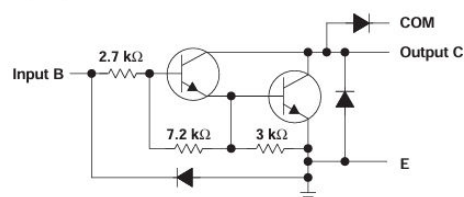
Open collector output. The Darlington transistor requires a power source connected via a pull-up resistor. For that purpose, you may use connector A or B's pin 30 which delivers 12 V, or an external power source.

When connecting to peripheral devices, note that Darlington's low (zero) state is around 0.9 V and not a TTL standard. The pull-up resistor value should be in accordance with the current required by your application, where, I=(Vsource-0.9V)/R. The maximum current for each Darlington is 0.800 A.   The Darlington's logic will operate as follows:

- Hv_drv_o = "High" => ext_out[B23/24] = "Low"
- Hv_drv_o = "Low" => ext_out[B23/24] = "High"

For additional information, refer to the Darlington's data sheet (see Table 10).

Note: If negative input voltage may occur, user must connect the output to a clamping diode.

2 Setting up the system

To setup the system, perform the following peripheral connections:

Peripheral device	To connector:
Keyboard	USB-1 or USB-2 (not required with remote access)
Mouse	USB-1 or USB-2 (not required with remote access)
Display	HDMI (not required with remote access)
1 GbE Network (optional)	RJ45
External Fan	Option for fan-less FantoVision40 model for powering an external user fan
Power adaptor	24VDC **Note:** at this stage, do not connect the FantoVision40 to a power outlet or turn on your power switch.

Connect your cameras as follows:

Camera	Connections
CoaXPress cameras	Connect the CXP camera(s) to micro-BNC connector(s)
GigeVision camera(s)	N/A – currently, FantoVision40 doesn't support GigE Vision. For GigE Vision interface support, please refer to the FantoVision20 systems.

3 Powering up the system

After performing all the connections noted above, including connecting the cameras, plug the AC power supply adapter to the power outlet or alternatively turn on your power switch. The system will automatically boot. Select the "gidel" user and click Enter. Enter the following password: "123456" and sign in.
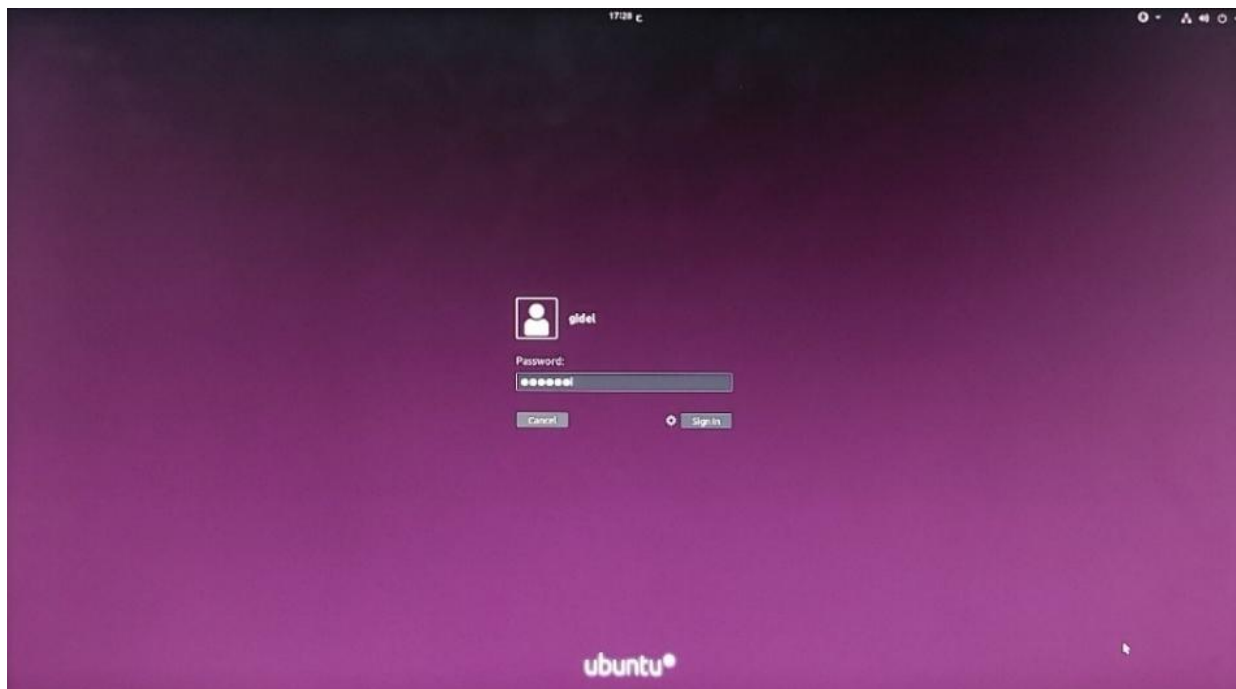

Figure 4: FantoVision40 Login Window

Wait for the OS to complete the boot process:

Figure 5: FantoVision40 Desktop Window

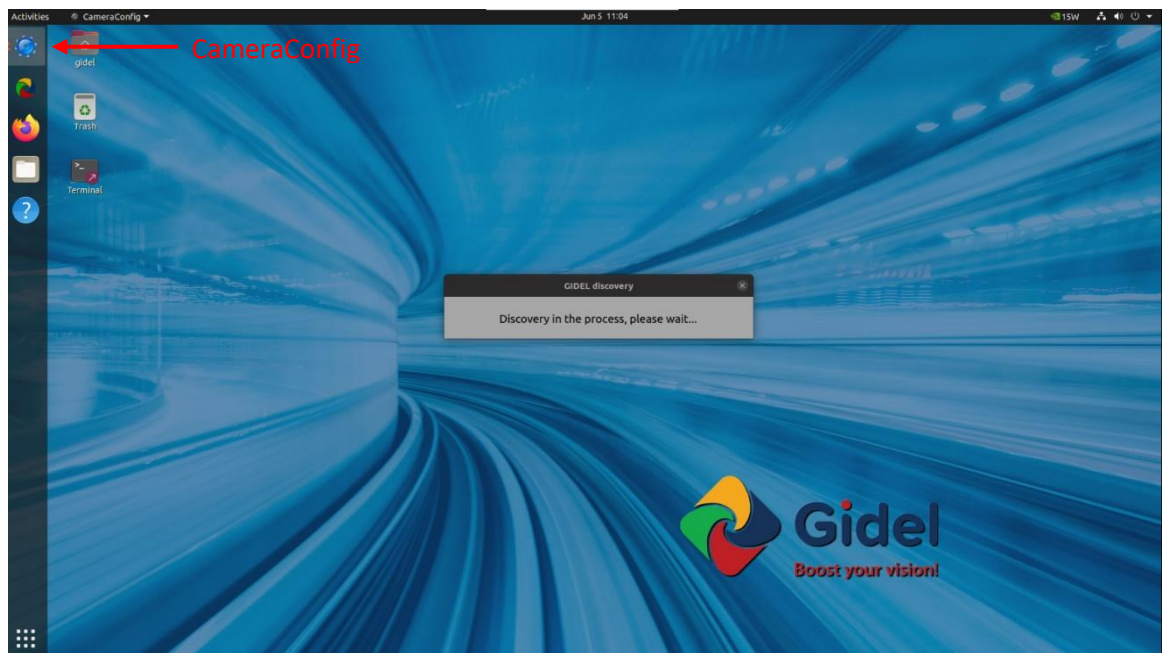# 4   Camera's configuration

4.1   Overview

The following chapter details the core essential steps to configure the cameras, initiate streaming, and display the captured streams from multiple cameras.

CameraConfig, Gidel's GenTL Consumer application, provides configuration and streaming control for CoaXPress cameras via the GenTL producer. For GenTL camera control via API, refer to the provided examples (see section 1) and to the ***Gidel InitCam API User Manual***. For detailed explanation on configuring and streaming control via the CameraConfig application in Linux, refer to the continuation of this chapter and to Chapter 4 of the ***CameraConfig Data Book***.
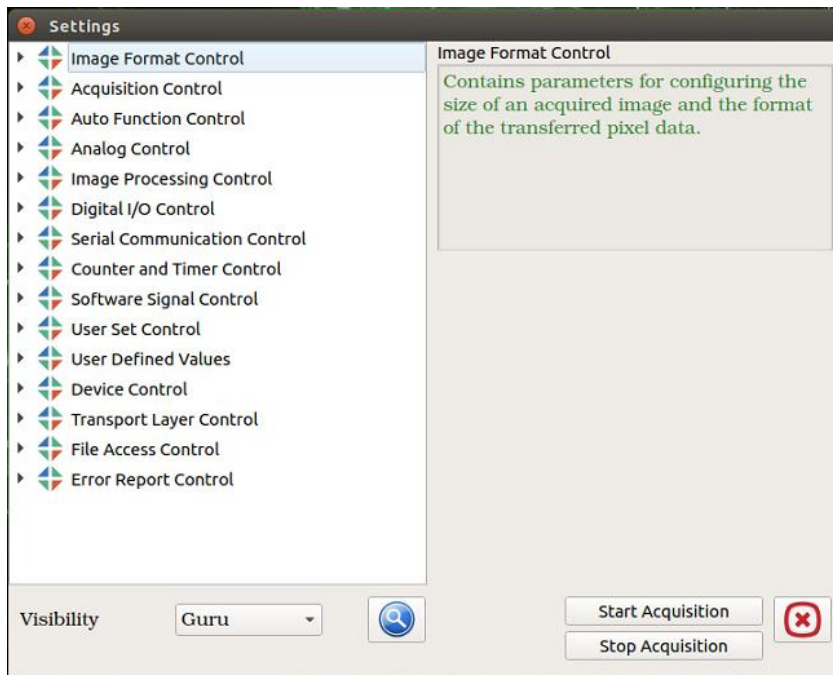
4.2 Configuring the camera

1. On the Desktop, double click the **CameraConfig** application icon to discover the CoaXPress cameras.


2. Double click on one of the discovered cameras to open the configuration window of that specific camera. In the image below, a single camera, **device_CXP_IP_0** was discovered.
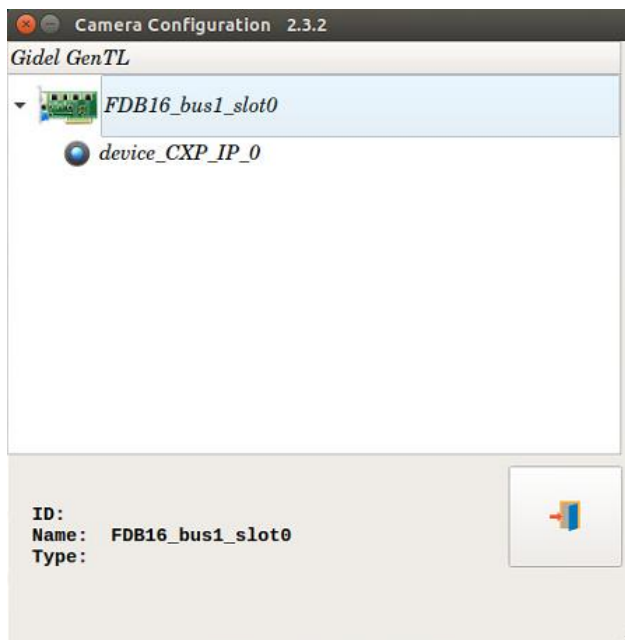
3. Once connecting successfully to the camera, the **Settings** Window will open as shown in the image below.

4. In the left settings pane, you can expand any of the entries to configure the camera. For example, when expanding the **Acquisition Control**, you may have an **Acquisition Mode** option allowing you to select between Continuous and Single frame options.
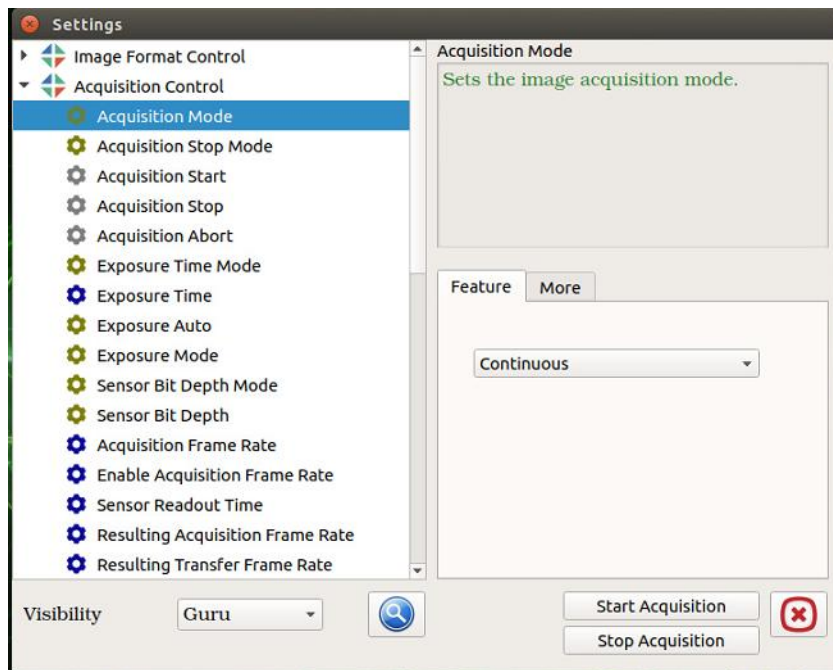
5. After you have completed configuring the camera, click the **Start Acquisiton** button to initiate camera streaming.
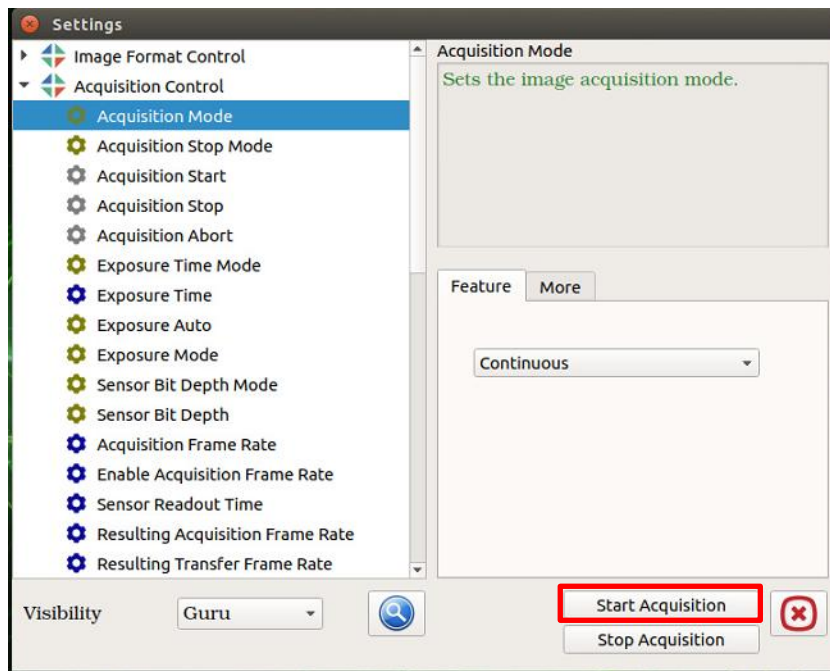
6. If there are multiple cameras, select the other camera(s) and repeat steps 3 to 5.

5 Running the Image Acquisition Viewer

The GidelCamViewer application enables displaying the image stream captured. The application is supported by InfiniVision only. If you have multiple cameras connected to the same InfiniVision instance, you must ensure that the cameras are synchronized. For unsynchronized cameras, you must use the multi-InfiniVision firmware. For more information, refer to section 1.6.3.

Double click on the **GidelCamViewer** icon to display the images captured.

A terminal window will be displayed and immediately afterwards a window will open and display the streaming.
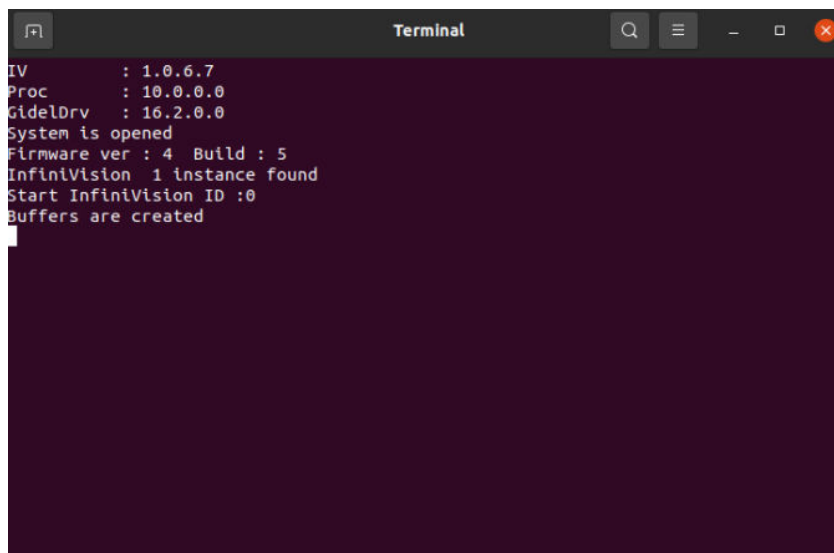
Alternatively, to run the viewer:

1. Open a new terminal window.
2. Go to the app folder:

```
gidel@gidel-desktop:~$ cd /opt/gidel/bin/GidelCamViewer
```

3. Run the viewer application:

```
gidel@gidel-desktop:/opt/gidel/bin/GidelCamViewer$ ./GidelCamViewer
```

Note: The GidelCamViewer offers additional display options using the following extensions:

-v = will display frame#, camera#, image size, board temperature, frames/s (FPS)

-h = will disable display and only the acquisition log will be displayed in the left pane.

6 Remote serial configuration

It is possible to connect from a remote computer to the FantoVision40 in one of the following ways:

1. Using the 1 GigE port, you may use a remote connection application such as TeamViewer.
2. Using a USB wireless dongle and a remote application as is done with the 1 GigE port.
3. Using the micro-USB port (USB-3) to configure the FantoVision40 via a serial communication (COM port) as detailed in the following section.
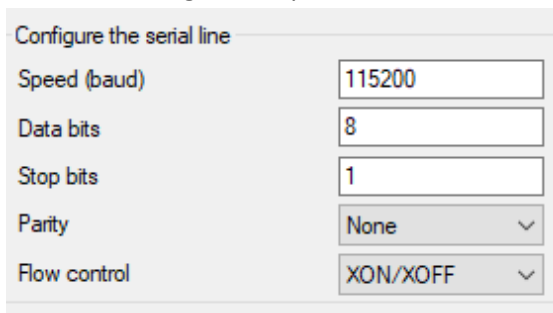
6.1 Remote serial configuration

To setup remote serial connection, do the following:

1. Connect PC's USB port to the micro-USB connector (USB-3) on FantoVision's rear panel.

For Windows Operating System:

2. Open the Device Manager on your computer (Windows OS).
3. Powerup the FantoVision40 and wait for a new USB serial device to appear under Device Manager's "Ports (COM & LPT)".
4. Use a serial comm application, such as PuTTY, to connect to the COM port that was added the Device Manager.
5. The Serial configuration parameters are:

Configure the serial line	
Speed (baud)	115200
Data bits	8
Stop bits	1
Parity	None
Flow control	XON/XOFF

Figure 6: Serial Communication Parameters

6. At this point, you may, for example, use ipconfig to discover the FantoVision's IP and then connect via your PC using a remote connection to the FantoVision's 1G Ethernet port.

7 Connecting an external memory device

When connecting an external memory device via the USB ports, you should adhere to the following guidelines:

1. For optimal performance, the external memory should be connected to USB-2 port with USB 3.1/3.2 Gen 2 (Single Lane) device.
2. When connecting the external memory device to the USB-2 port:
3. When connecting the external memory device to the USB-2 (USB 3.1) port:
    a. During memory operation, do not use a wireless device via the other USB ports.
    b. For using a wired mouse and keyboard, you may connect a USB hub to the USB-1 (USB 2.0) port.
    c. Alternatively, you may control and monitor the system via the 1G network port.
4. It is not recommended to use NVME m.2 memory.
5. If the memory disk consumes more than 4 W, you must use a memory that receives its power from an external source.

8 Examples

	Example Name	Description
1.	**InfinVisionExample**	InfiniVision grabber example demonstrating using InfiniVision API for camera acquisition. *
2.	**InfinVisionExampleSimple**	Simplified version of InfinVisionExample - acquisition only in first instance of InfiniVision
3.	**InfinVisionExampleSimpleCxpConfig**	InfiniVisionExampleSimple with initialization of single CoaXPress camera
4.	**InfinVisionMultiFrameExample**	Example demonstrating the capturing multi-frames.
5.	**GidelFrameExtractorExample**	Demonstrates how to extract the multi-frame buffers
6.	**FgExample**	ProcFG grabber example demonstrating using the ProcFG API for camera Acquisition. *
7.	**CxpConfigExample**	Camera configuration example for a CoaXPress camera
8.	**TestPatternExample**	Test-Pattern example demonstrating initialization of the Gidel test pattern IP.
9.	**TriggerExample**	An example demonstrating the configuration of the frame grabber's triggering.
10.	**ScanIpExample**	An example demonstrating how to use the ScanIP API to scan the current FPGA firmware.
11.	**GidelDecoderExample**	Example demonstrating decompressing lossless compression files into raw data.

The FantoVision's **Examples** folder (/home/gidel/examples) contains examples demonstrating how to use the Gidel APIs to operate the FantoVision's various functionalities as detailed below:

* The captured data is transferred directly to the Jetson's joint memory resources that includes the CPU, GPU, AI engine, etc.

For detailed explanation on each example, refer to the inline comments in the example source code and to the following documentation:

	Document	Description

1.	**InfiniVision API Data Book.pdf**	Frame grabber API – refer to 'Grabber' Example
2.	**Global Regs - Grabber IO Control Data Book.pdf**	Software I/O configuration and control – refer to 'Trigger' example

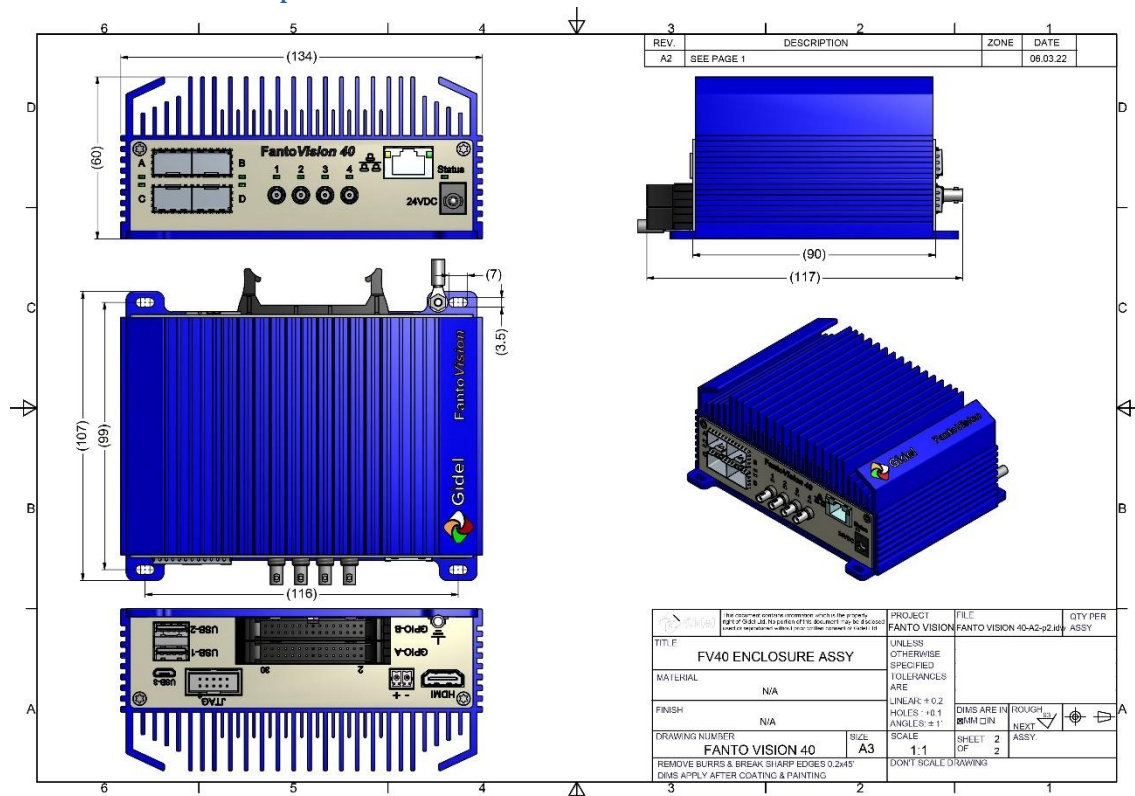# 9 Technical Specifications

9.1 Mechanical Specifications

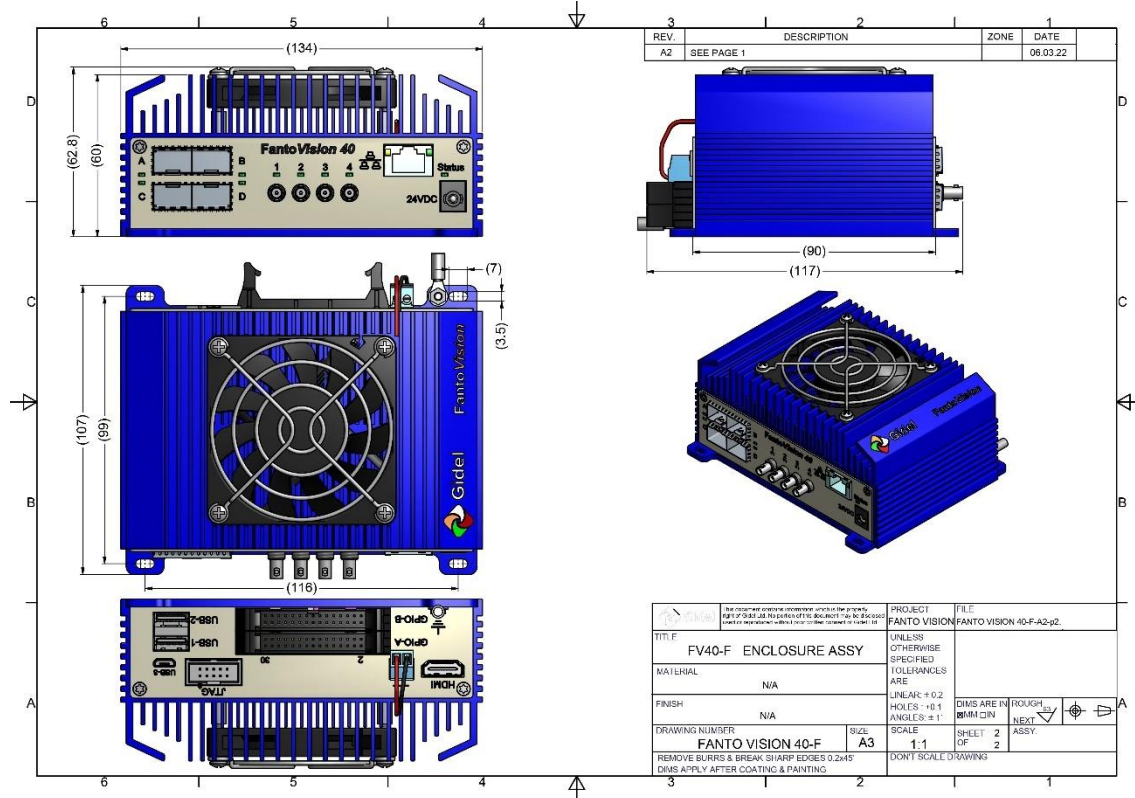*Figure 7: FantoVision40 without a Fan Mechanical Dimensions (mm)*

Table 13: FantoVision40 with Fan Mechanical Dimensions (mm)

The weight of the FantoVision40 is 710 g without the fan and 730 g with the fan.

9.2   Electromagnetic Shielding

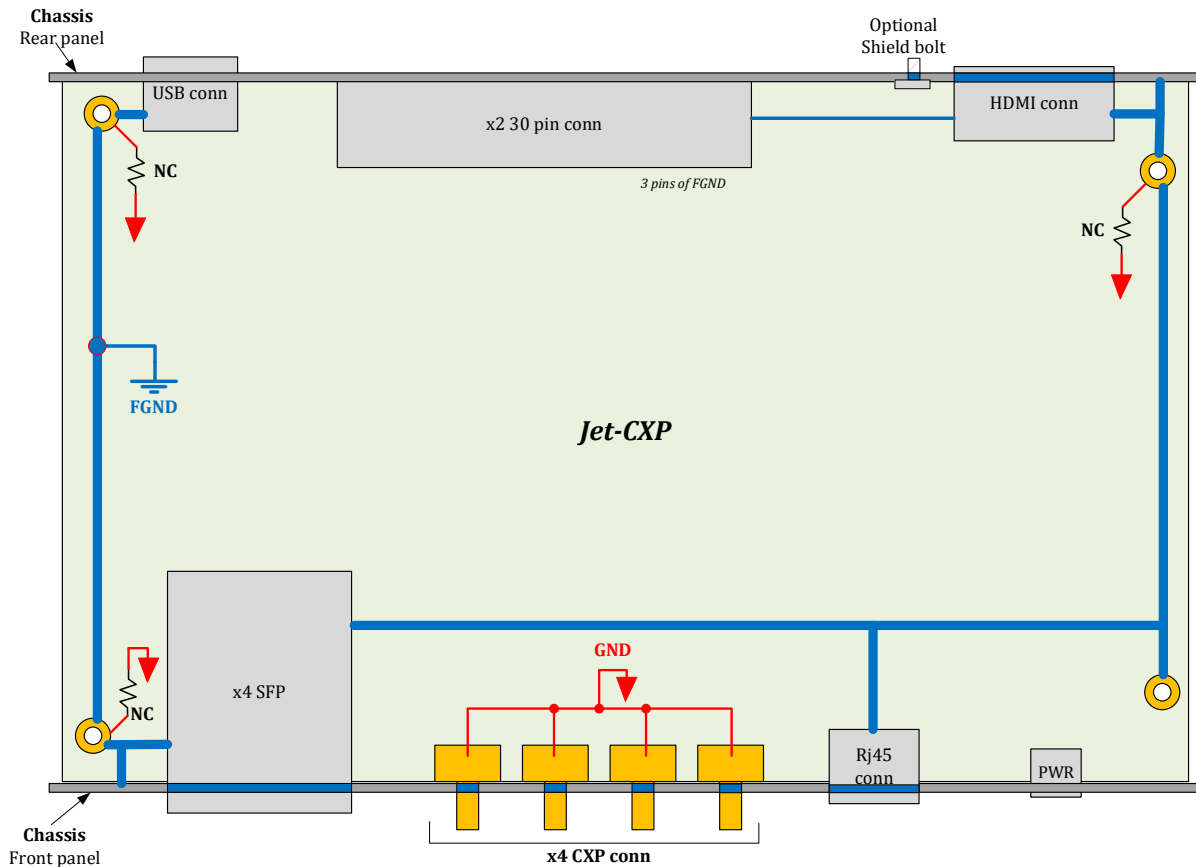The following schematic shows the FantoVision40's shielding connectivity:

Figure 8: FantoVision40 Shielding Connectivity

The external bolt on the rear panel may be used for connecting external shielding.

9.3   Power Specifications

The FantoVision external power supply specifications:

1. **Power**: 25W (typical load @ 24V input voltage for ambient temperature of 45°C; typical 48W when including CXP camera power over). Maximum recommended current consumption is 4.5 A.
2. **Polarity**: (+)Inner contact
3. **Tolerance**: +/- 8%
4. **Shielding**: the power source must be of unshielded type
5. **Recommended power supply**: TRH100A240 (CINCON)or any other unit with equivalent specifications.

9.4   Environmental and safety specifications

1. Intended for indoor use only.
2. Wall mounting is limited to 2 meters.
3. Not suitable for use in locations where children are likely to be present.
4. The SFP transceiver's must be safety approved to IEC 60825 and which is CDRH registered
5. Ingress Protection (IP) rating: IP51

10 Document Revision History

Date	Changes
December 2022	Initial document
February 2023	Added section on frame per second (FPS) limitations.
December 2023	Updated: • Examples description • Firmware files list • I/Os' description • Camera Configuration section Removed explanations on GigE Vision interface.
February 2024	• Removed all references to GigE Vision • Added section on cloning the Jetson image • Added note on removing the paint coat for the grounding screw
June 2024	Updated: • *Configuring the camera* section • *Examples* section • Removed the *Recovering and Cloning the Jetson Image* section
February 2025	Updated the models offering table
April 2025	• Updated I/Os description • Expanded technical specification description to include electromagnetic shielding, power, environmental and safety specifications
May 2025	• Minor correction in power specification description
August 2025	• Support for multi-link CoaXPress-12 • Updated description of GidelCamViewer application • Addition of firmware options
September 2025	• Added description of GPIO pinout map • Added section on using external memory devices • Updated examples list
October 2025	• Update of FantoVision40 model offerings