

Camera Training Center Breda The Netherlands

Sept 2017



grass valley

A **BELDEN** BRAND

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- ▢ Training Manager
- ▢ Trainer
- ▢ Acceptance Engineer
- ▢ Demo specialist
- ▢ Web master

- your guide for this INTERACTIVE session.
- **Welcome to the LDX WEB-Training**



Service LDX series

This part gives you some more details about the LDX service procedures

Service

- ◆ New Service philosophy
- ◆ Boards overview (inside LDX / XCU)
- ◆ Diagnostics
- ◆ Knowledge Base information



Service LDX series

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New Service Philosophy

It's Time to create
new Mindset

2012

LDX Inside

Test

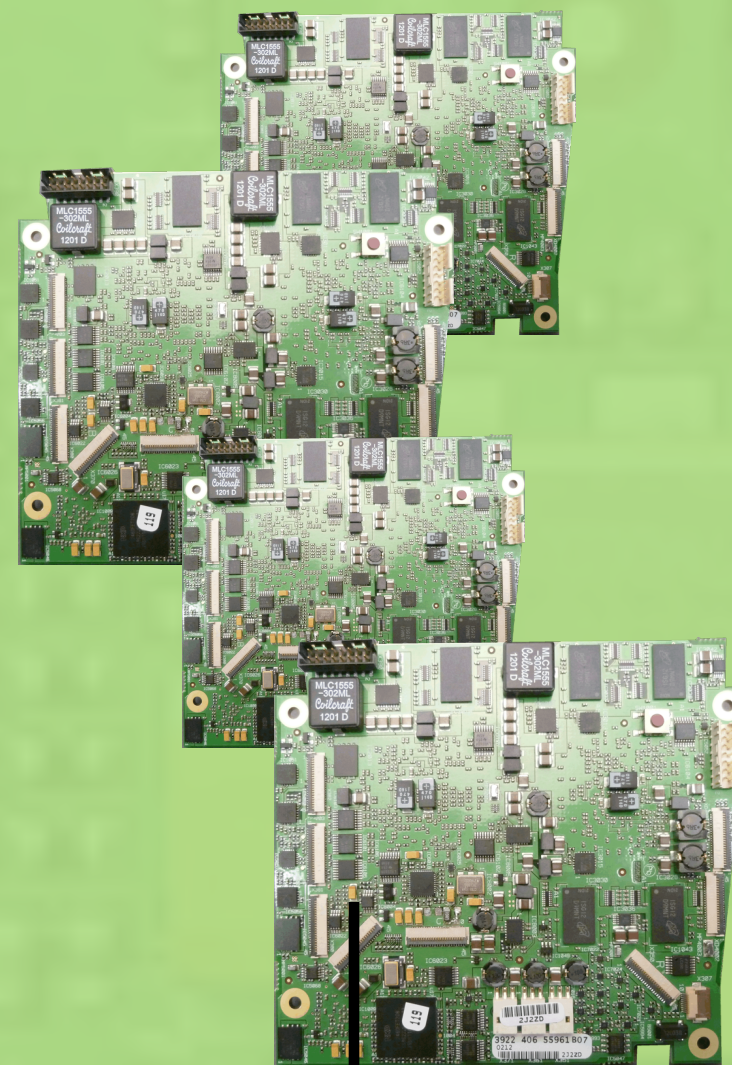


Few Engineers per region
and not all from GV (External)

Several Engineers per region

New Service Philosophy

8000series

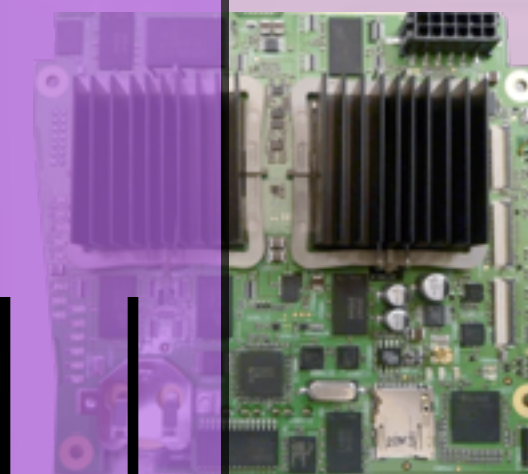
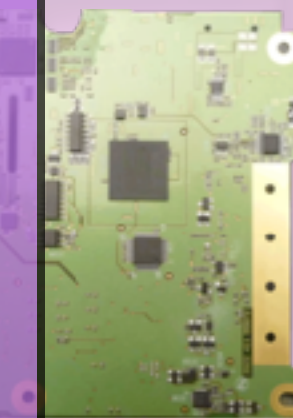


RS232

LDX
SERIES



Monitoring
Engine



UTP
USB
Micro SD
DONGLE

To support this new philosophy there is a big change in the camera design (software) an

Advanced Monitoring Engine

is available to support the user with finding the problem for the LDX series

New Service Philosophy

Advanced Monitoring Engine

- ◆ **Tools for diagnostics** (under construction)
- ◆ **HW monitoring**
 - internal details (log files) (Micro SD)
 - external details (UTP,USB,Dongle)
 - combination check
- ◆ **FW monitoring** (boot up)
- ◆ **VF / MCP / OCP**
- ◆ **LDK Connect**



New Service Philosophy

Advanced Monitoring Engine

◆ HW monitoring

- ☑ internal details (log files) (Micro SD)
- ☑ combination check
- ☑ external details



connect camera	In / Ext access	Power Ok	No Power in camera
UTP	extern	yes	no
USB	extern	yes	no
Dongle	intern	yes	yes

Remark:

Even when the camera is completely dead it will be possible to diagnose the system with the use of a Dongle connected to an internal connector. Or just read the Micro SD data with your computer.

Service LDX series

not measured

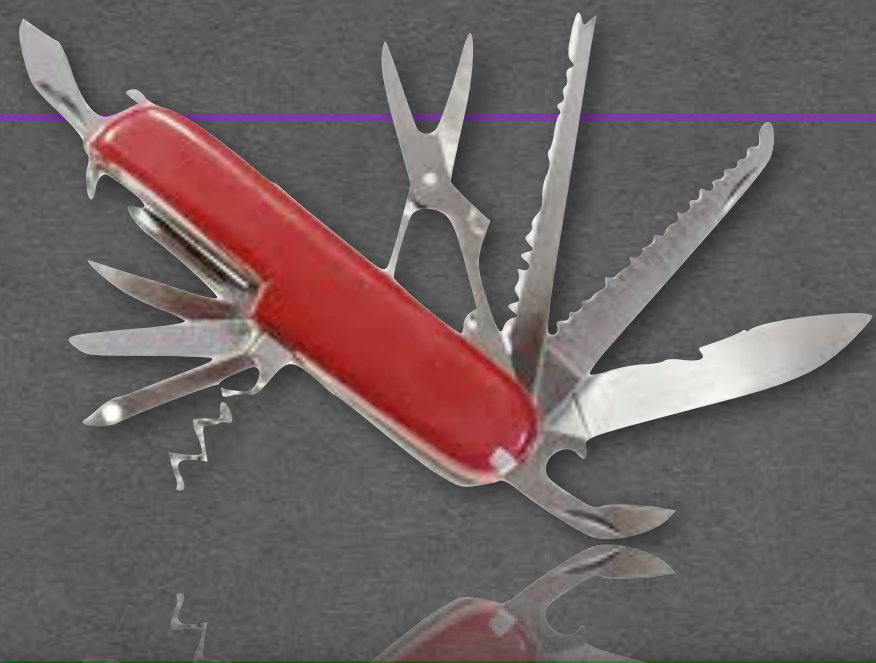
measured



	LDK series	LCD VF	LDKConn.	OCP/MCP	LDX
Packages			ISO		
Transmission		-			
Fan / Temp					
Power	leds			Near Future ?	
Video / Audio / Intc	simple	-		via SNMP trap	
FW/Applic. (bootup)					
RealTimeClock					timestamp
System combination					
Micro SD					
logging		simple			

LDX Inside





Service LDX series

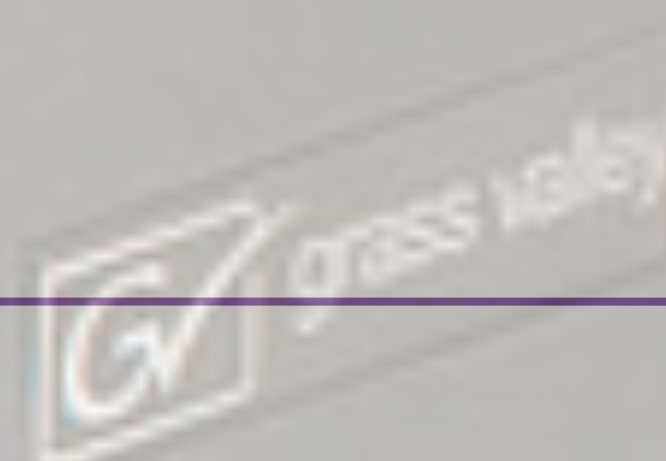
New Service Philosophy

With the new **LDX series** platform we will have a new **Tools**

LDX Inside

- **Tools** that are **running within camera system**. (Internal diagnostics)
- **Tools** that are **running next to the camera system**. (External diagnostics)
- **Tools** that create a complete **new workflow**.
- **Tools** that **reduce downtime**.
- **Tools** that indicate errors and **send** this to the **assigned person**.
- **Tools** that are capable to **look back** in time (logging)
- **Tools** to create the most **reliable camera systems**

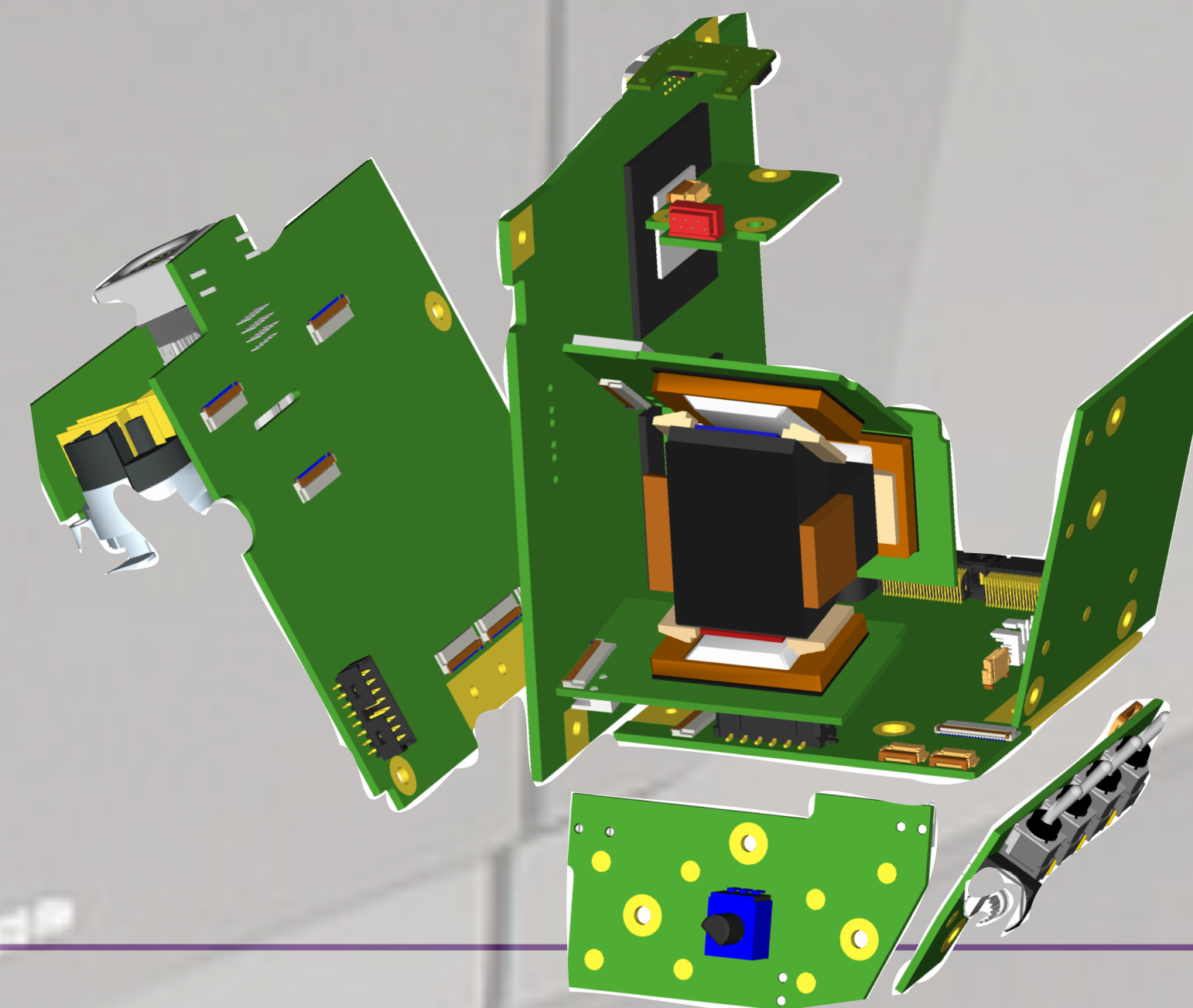
Service LDX series



This part gives you some more details about the LDX service procedures

Service

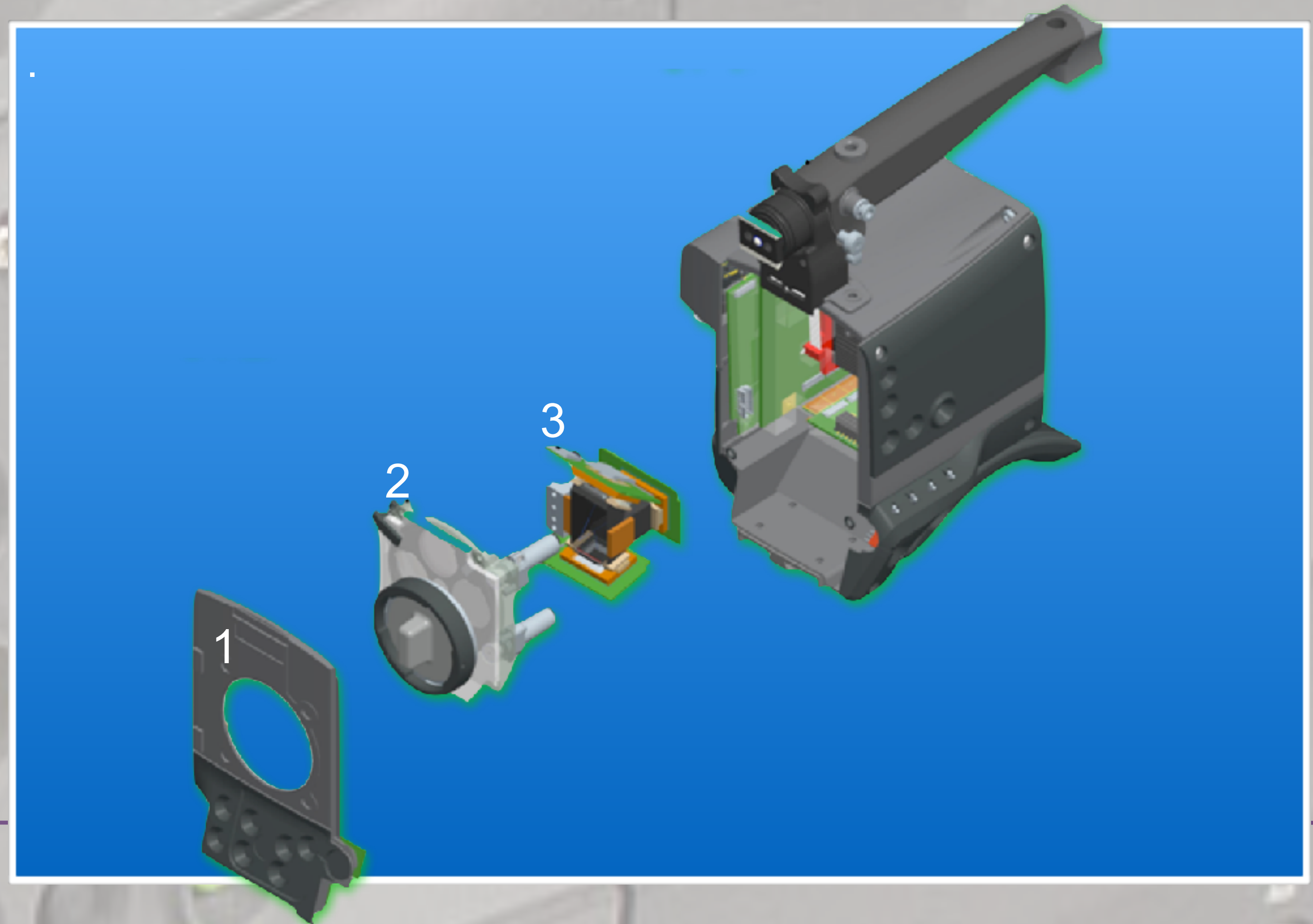
- ◆ New Service philosophy
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Service LDX series

How to Service LDX (boards)

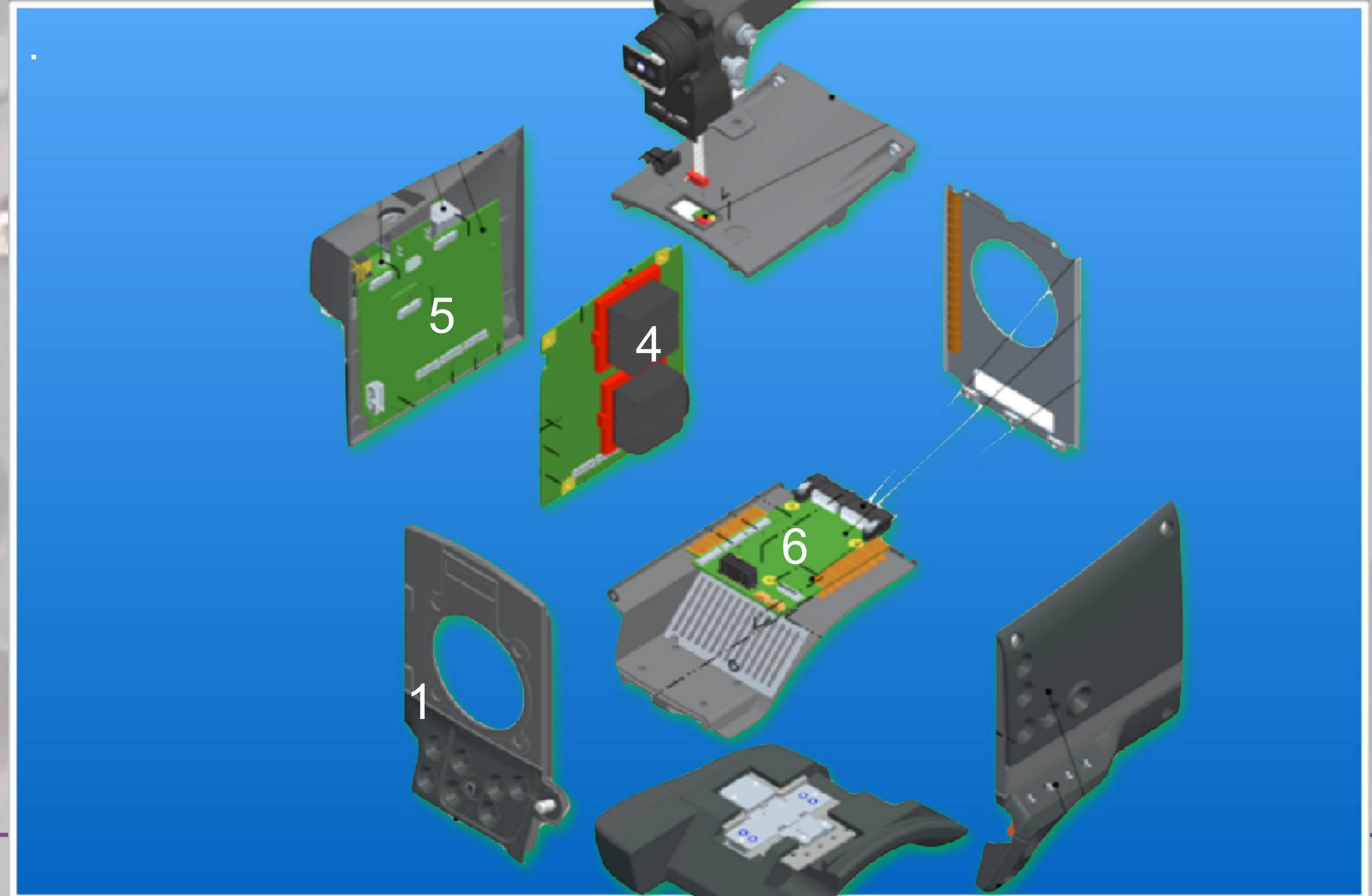
- 1 - Front plate
- 2 - Lens plate
- 3 - Front unit
- 4 - LDX
-



Service LDX series

How to Service LDX (boards)

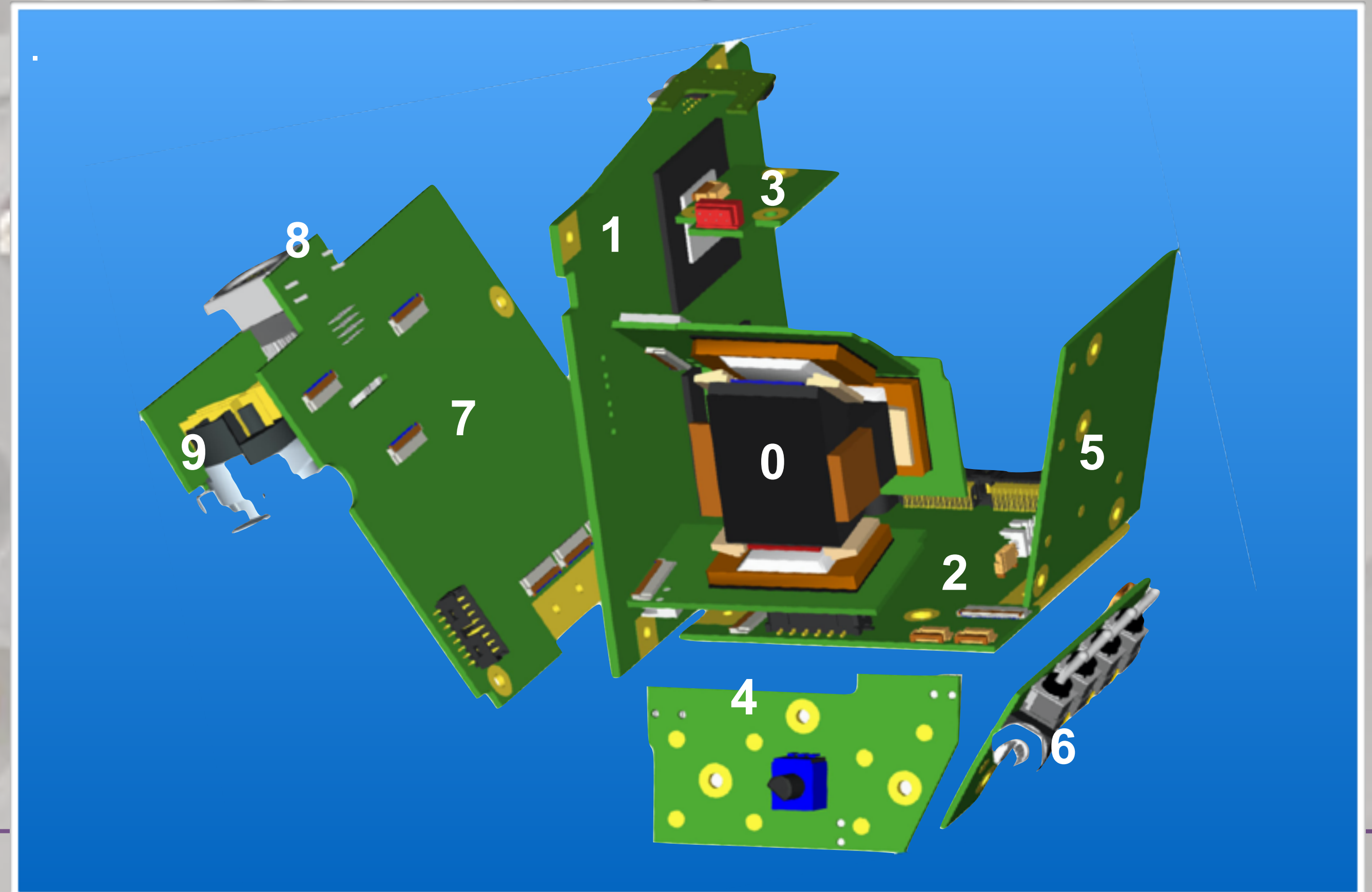
- 1 - Front plate
- 4 - Right Processor board
- 5 - Right Cover board
- 6 - Inter conn.
Power board

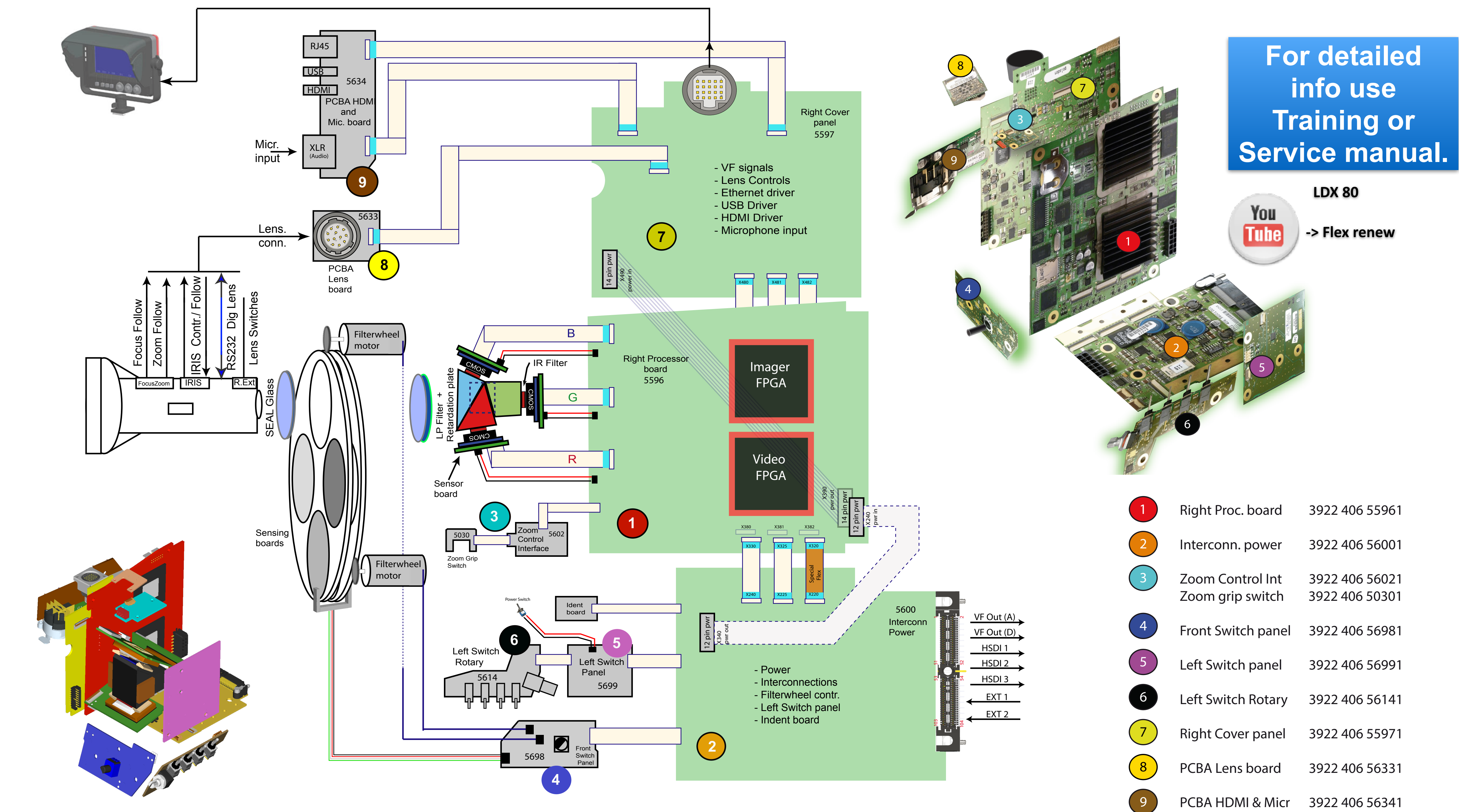


Service LDX series

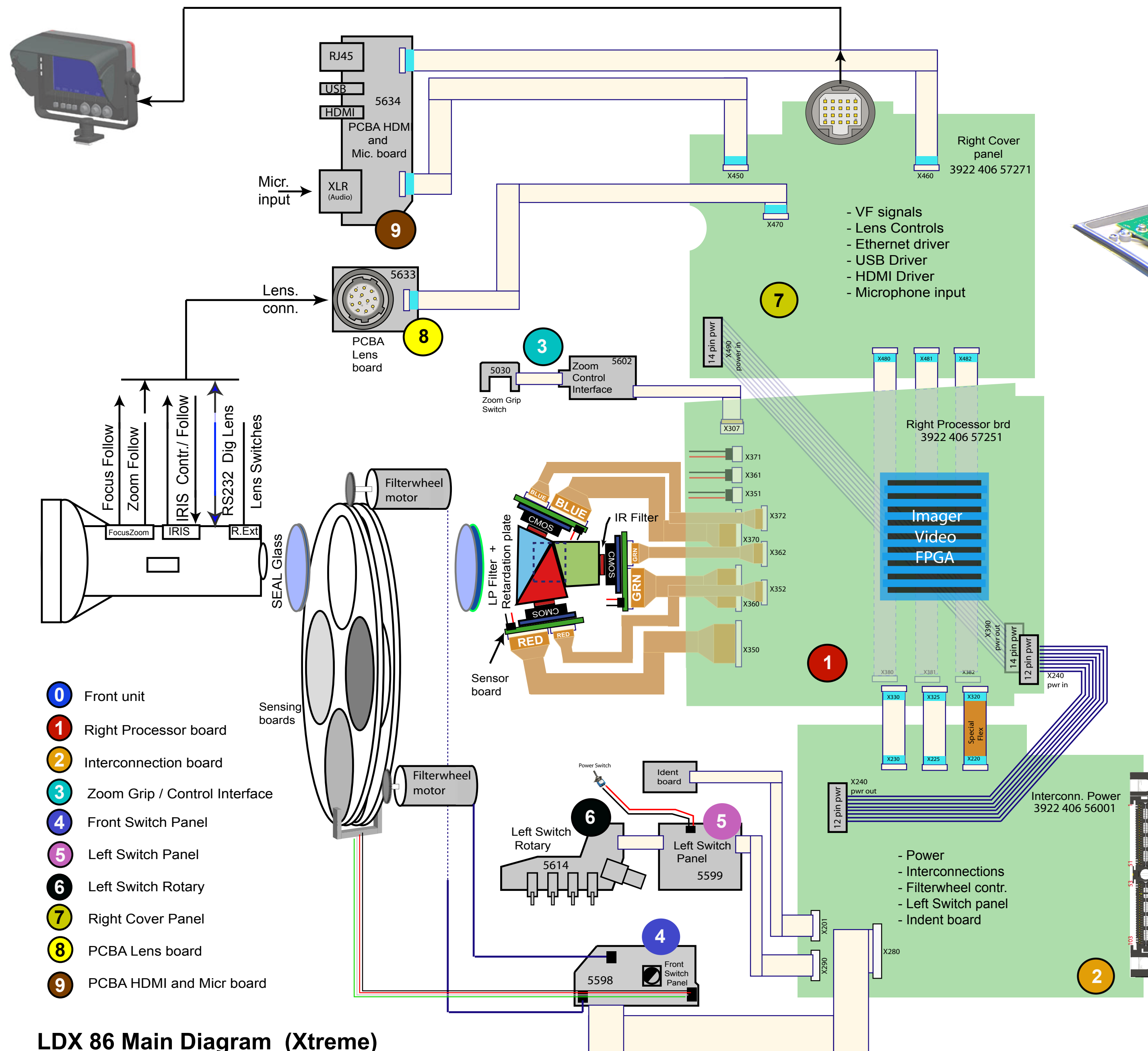
How to Service LDX (boards)

- 0 - Front
- 1 - Right Proc. board
- 2 - Interconn. power
- 3 - Zoom Control Int
- - Zoom grip switch
- 4 - Front Switch panel
- 5 - Left Switch panel
- 6 - Left Switch Rotary
- 7 - Right Cover panel
- 8 - PCBA Lens board
- 9 - PCBA HDMI & Micr

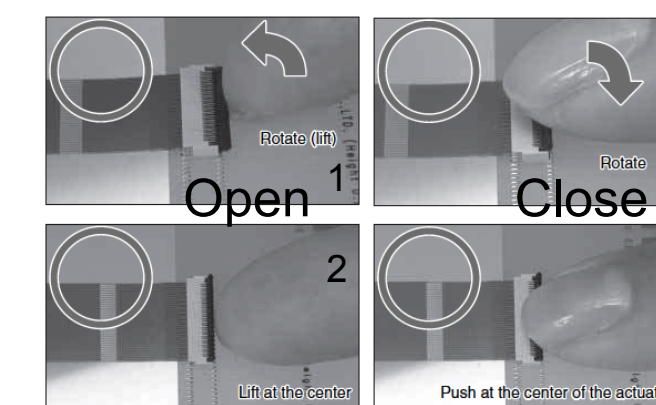
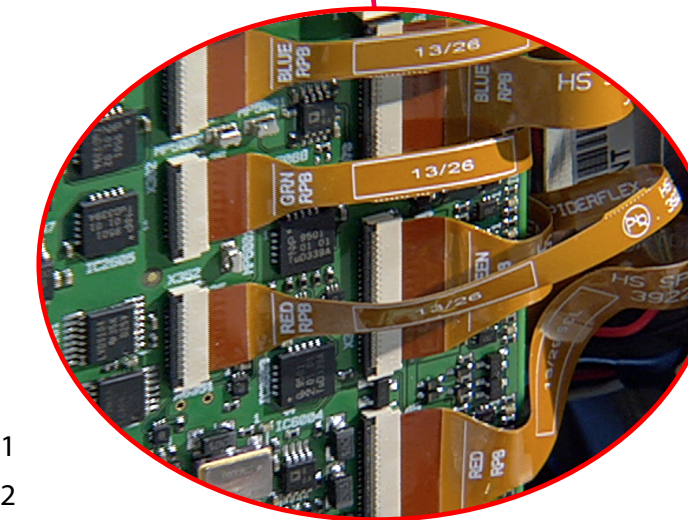
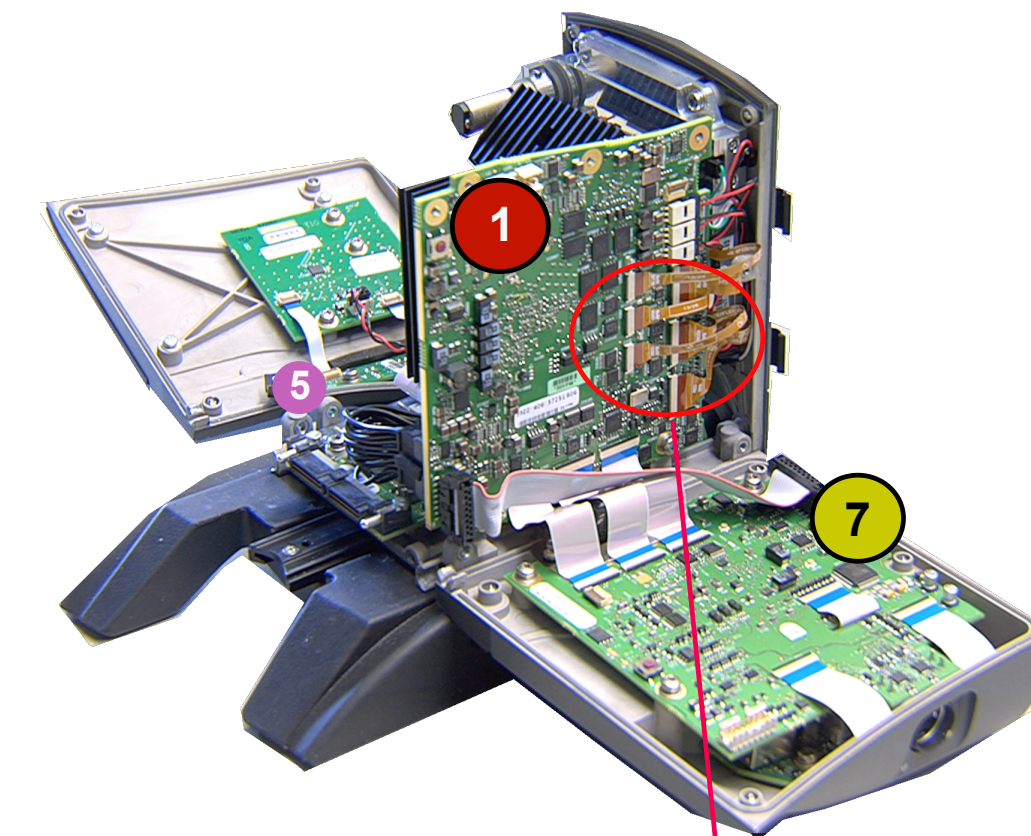
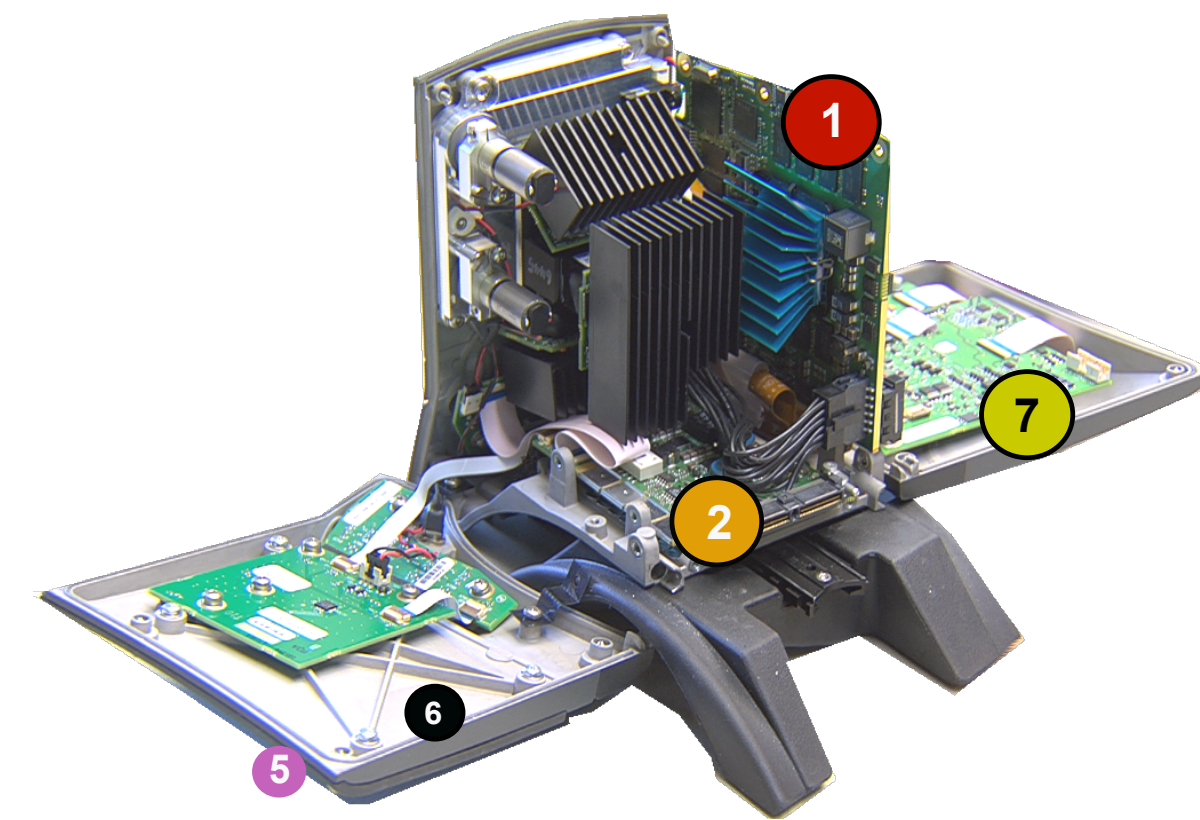




LDK Xens Main Diagram



LDX 86 Main Diagram (Xtreme)



**For detailed
info use
Training or
Service manual.**

LDX 86/Adaptor/XCU

-> Disassemble



Service LDX series

How to Service Compact camera for LDX series



Service LDX series

How to Service Compact camera for LDX series

The LDX Compact camera will be based on the LDX camera head. The front module and the RP board will be used without modifications in the Compact camera.

The housing is new and consists of 2 extrusions with a front plate and back panel.

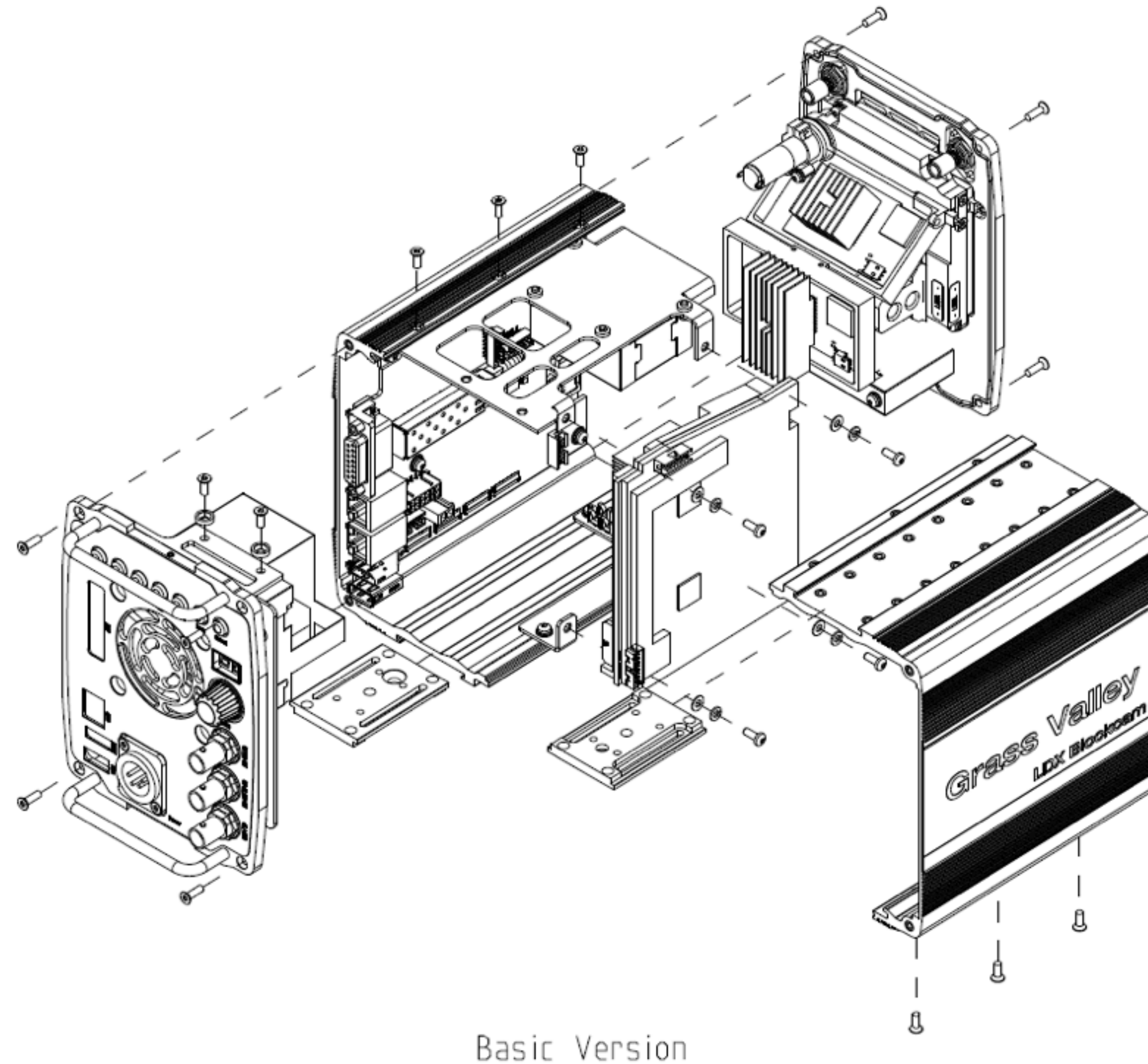
The Compact camera is build up from the left side to the right starting with the Left Cover Board in the Left extrusion. Before the last cover (Right extrusion) is placed the complete camera including frontmodule and connector board can be tested. The right extrusion is placed to cover and close the complete Compact camera.



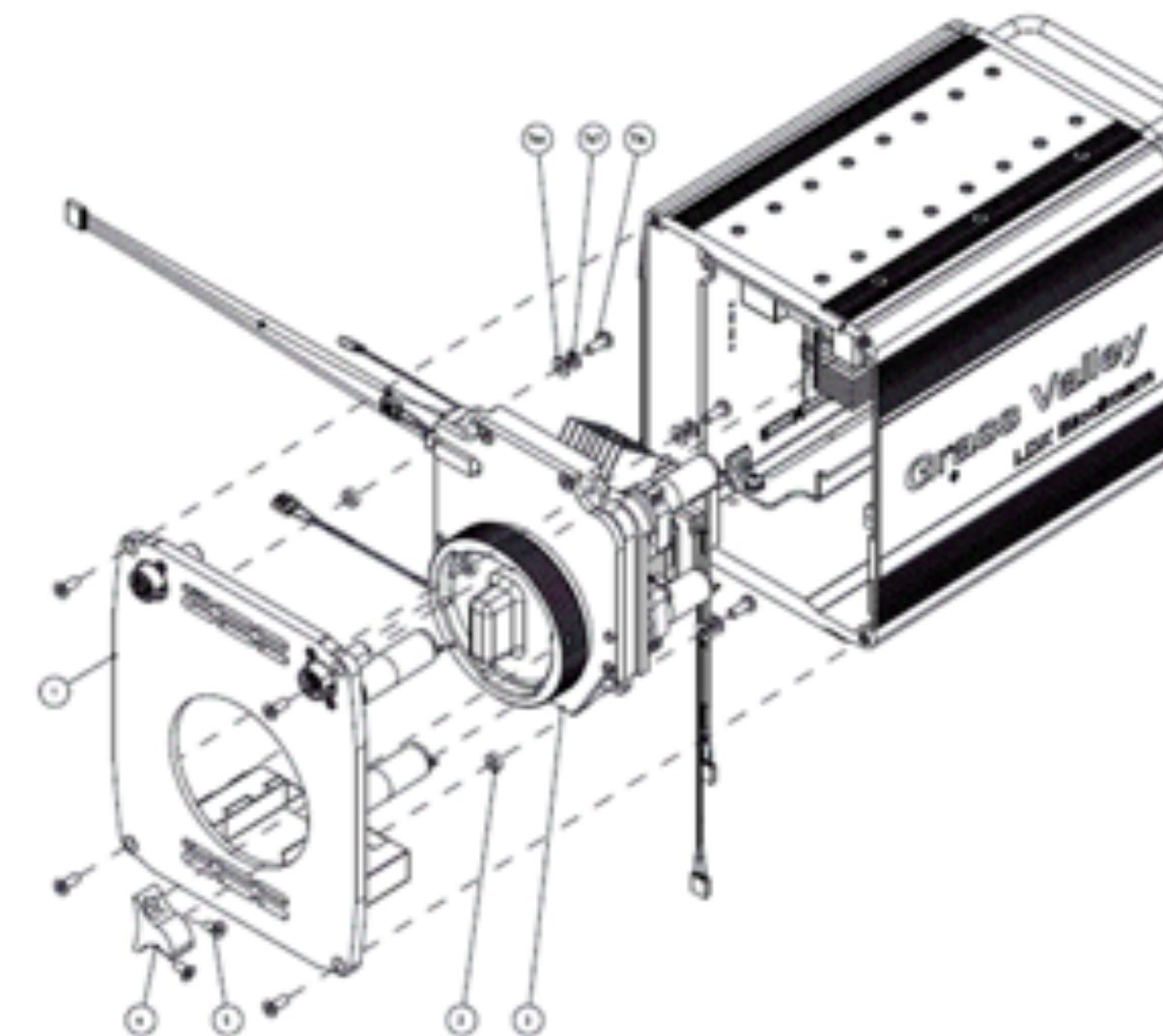
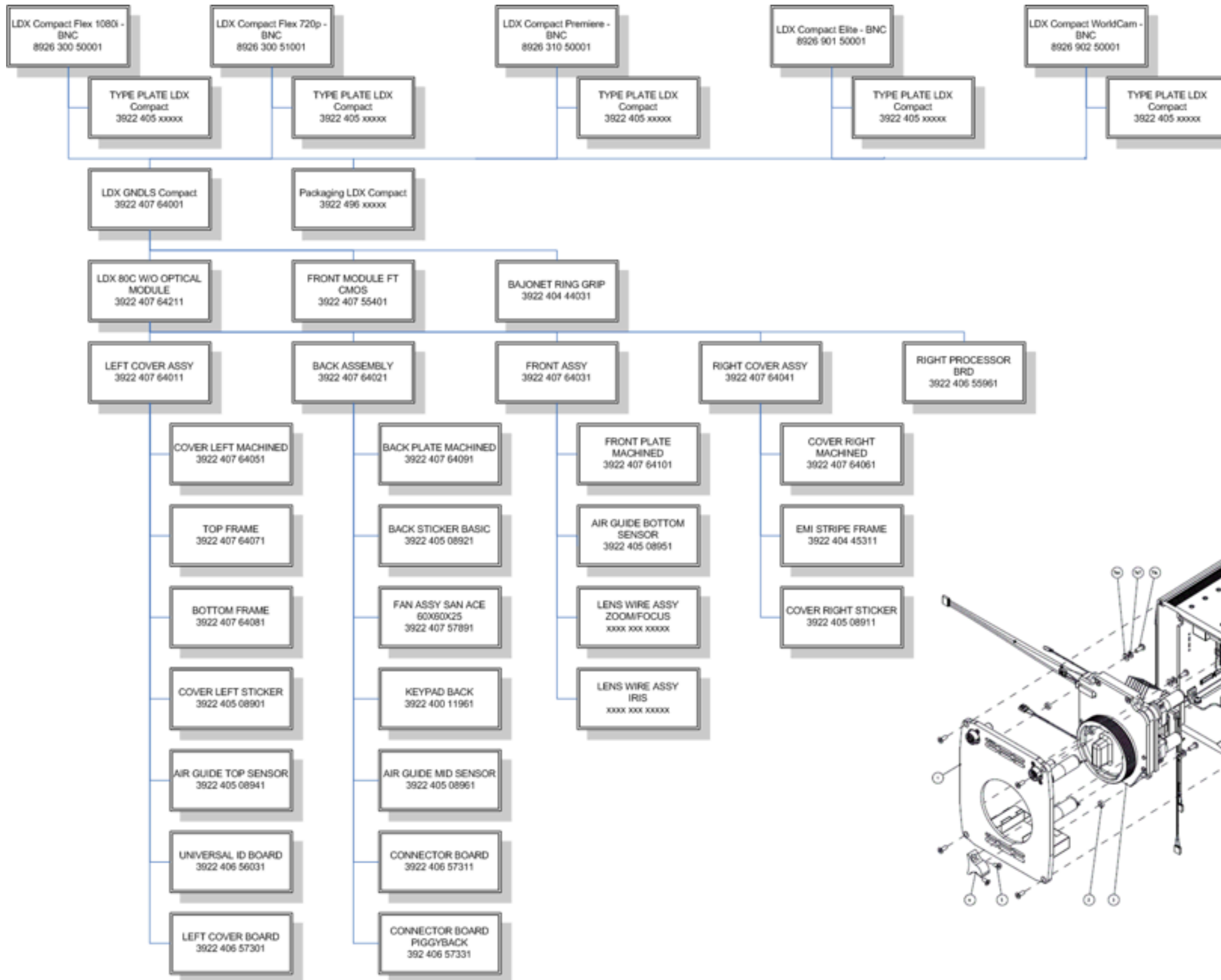
Back Panel
Left Cover
Right Processor



Service LDX series



For detailed
info use
Training or
Service manual.



For detailed
info use
Training or
Service manual.

Service LDX series

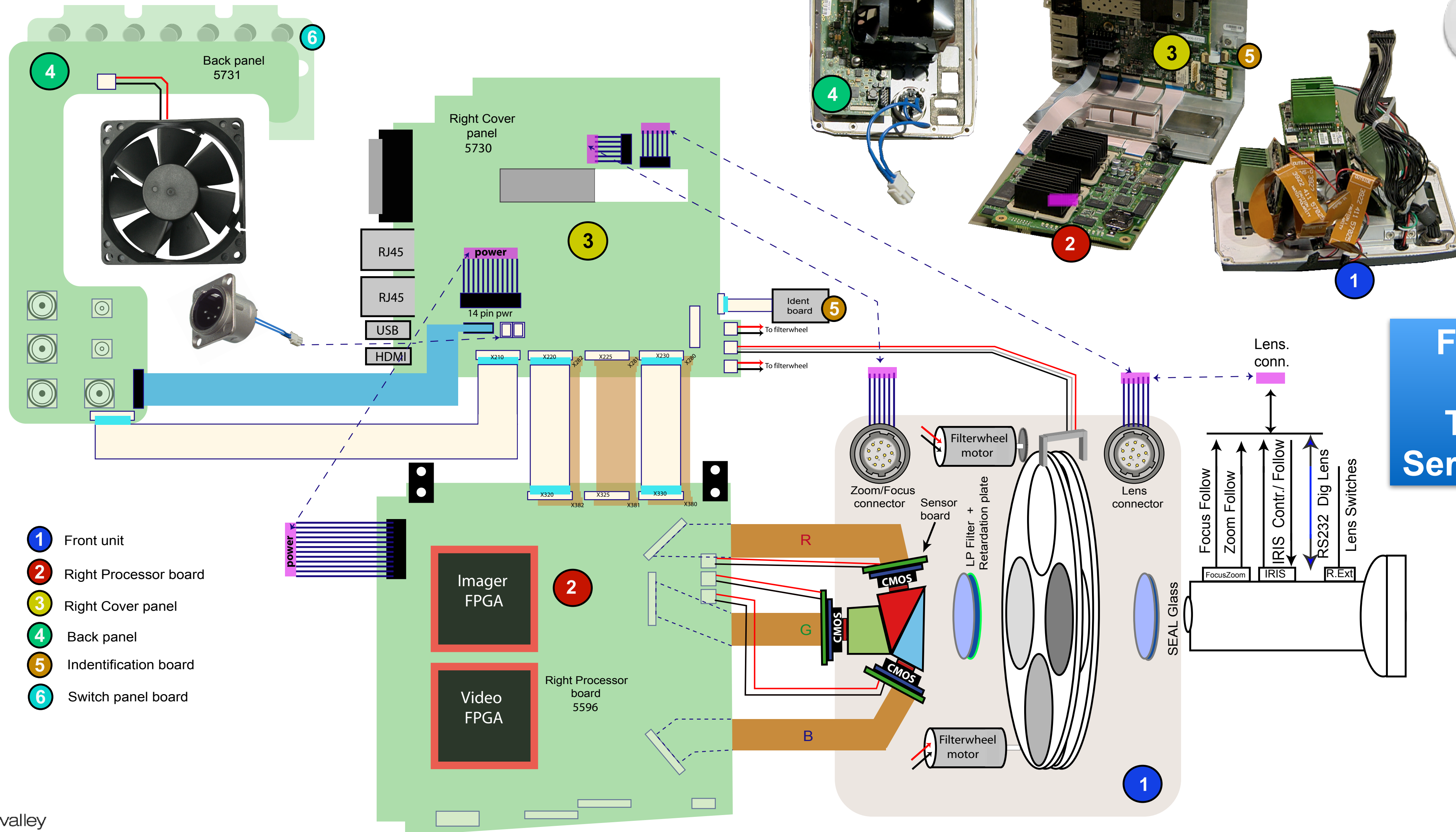
LDX Compact



-> Disassemble



-> Power cable modification



For detailed info use Training or Service manual.

Service LDX series

How to Service 3G Adaptor for LDX series



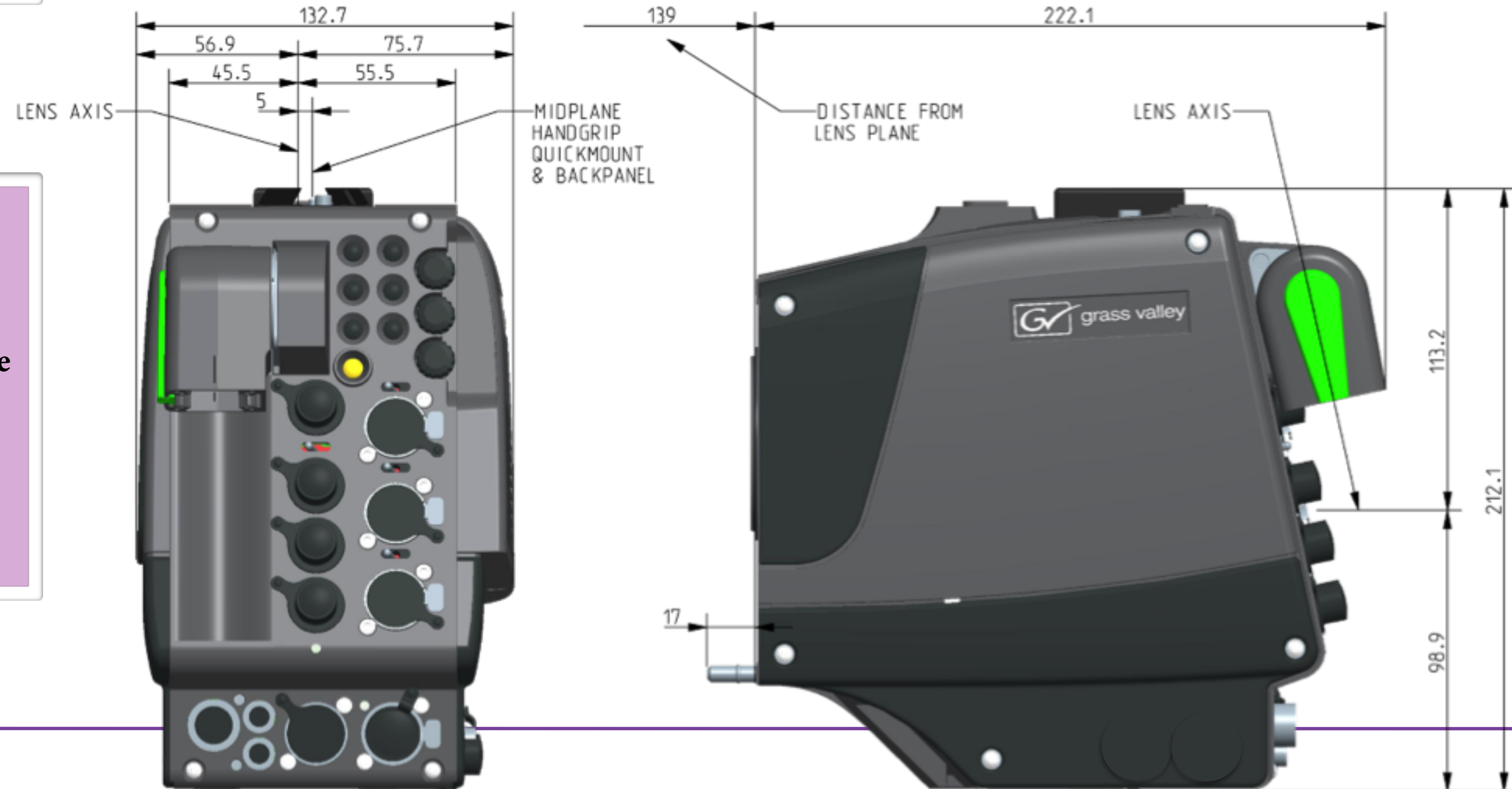
**LDX 5640 3G Triax
and
LDX 5650 3G Fiber**

Service LDX series

Sizes

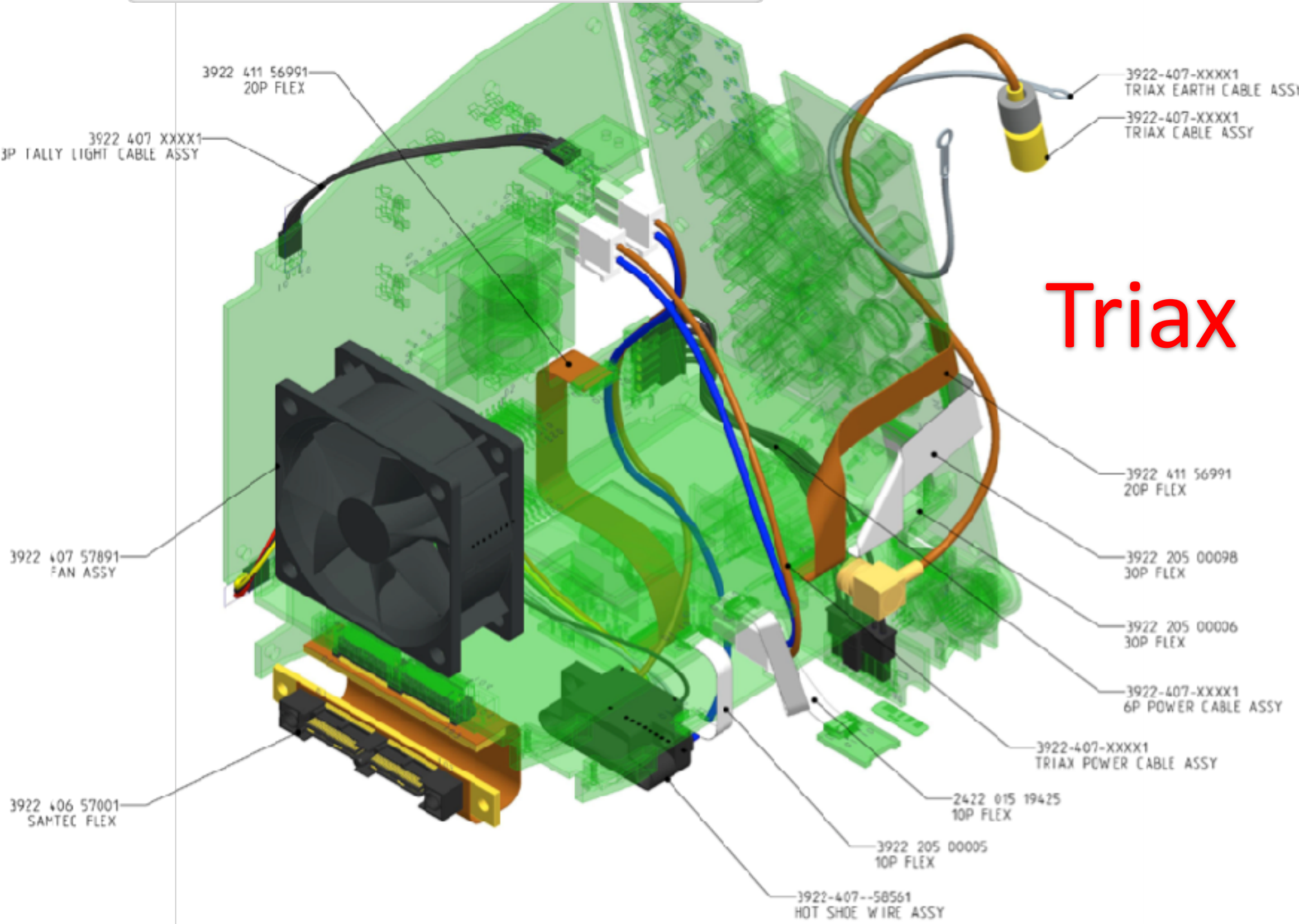
Weight

The weight of the adapter will be approximately 1.7kg
This is almost **a kg less** than the current LDK 4419 and LDK4421 adapters.
This will have an effect on the overall balance of the LDX camera system.

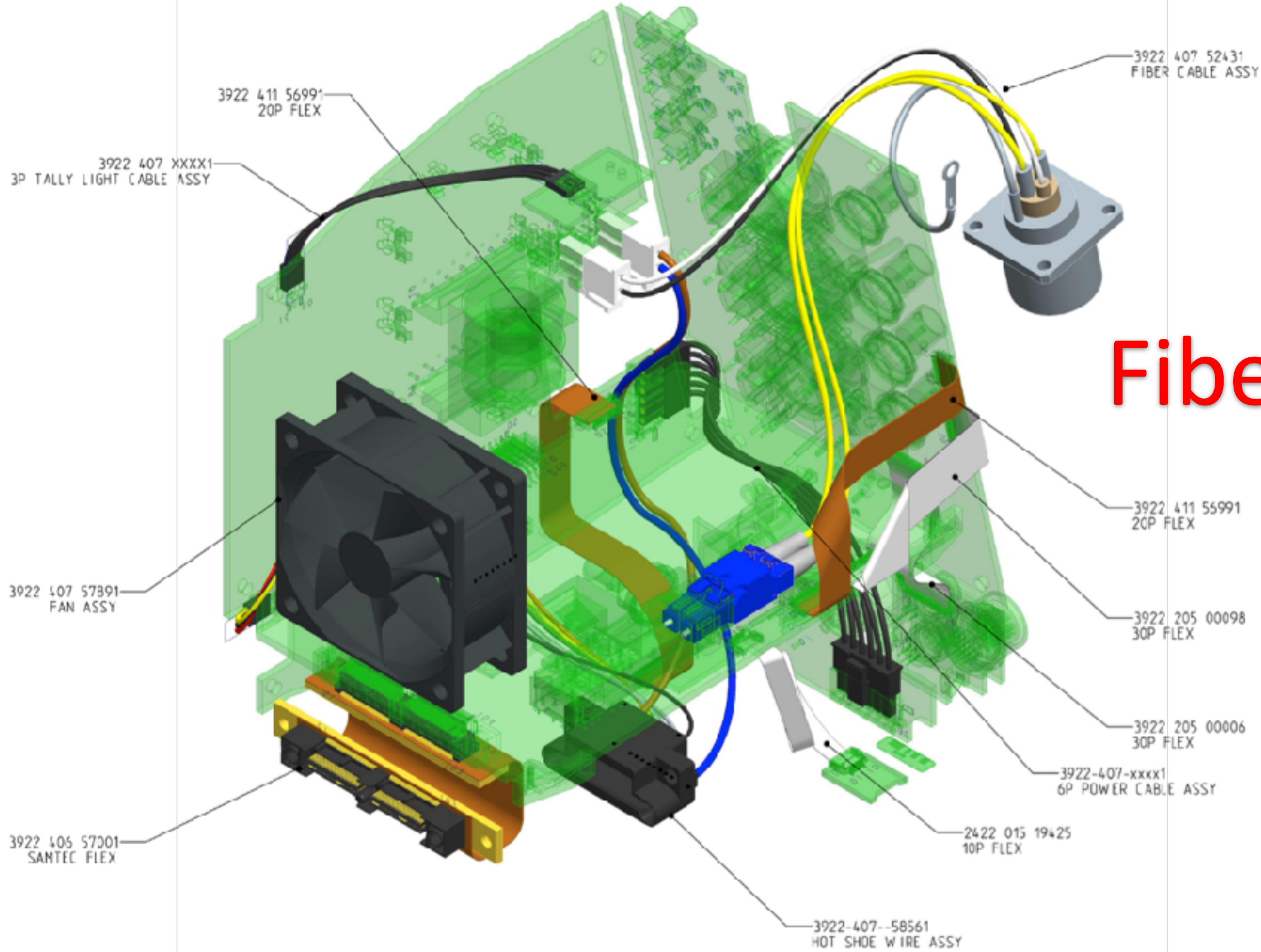


Service LDX series

Inside view



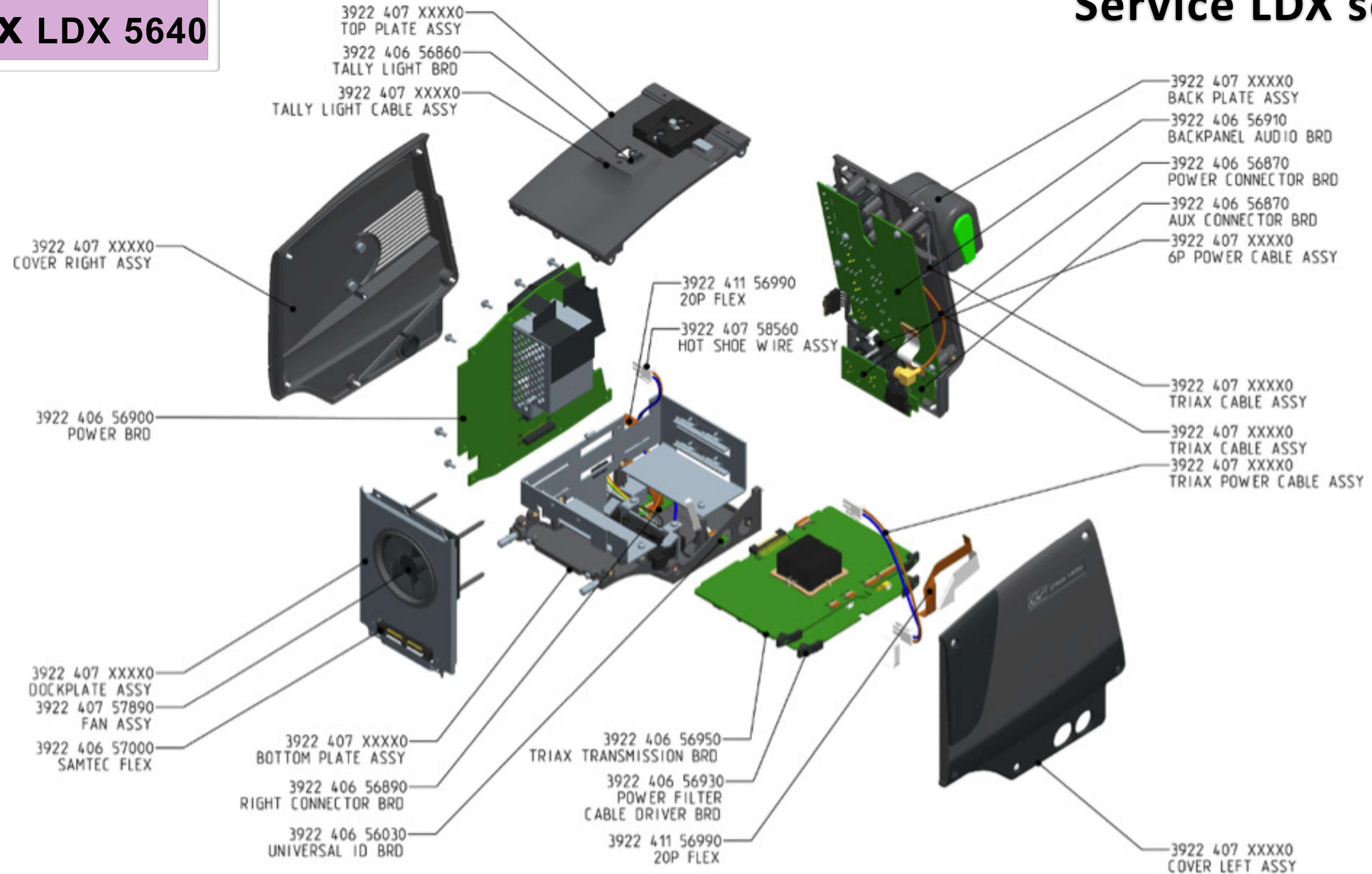
Triax



Fiber

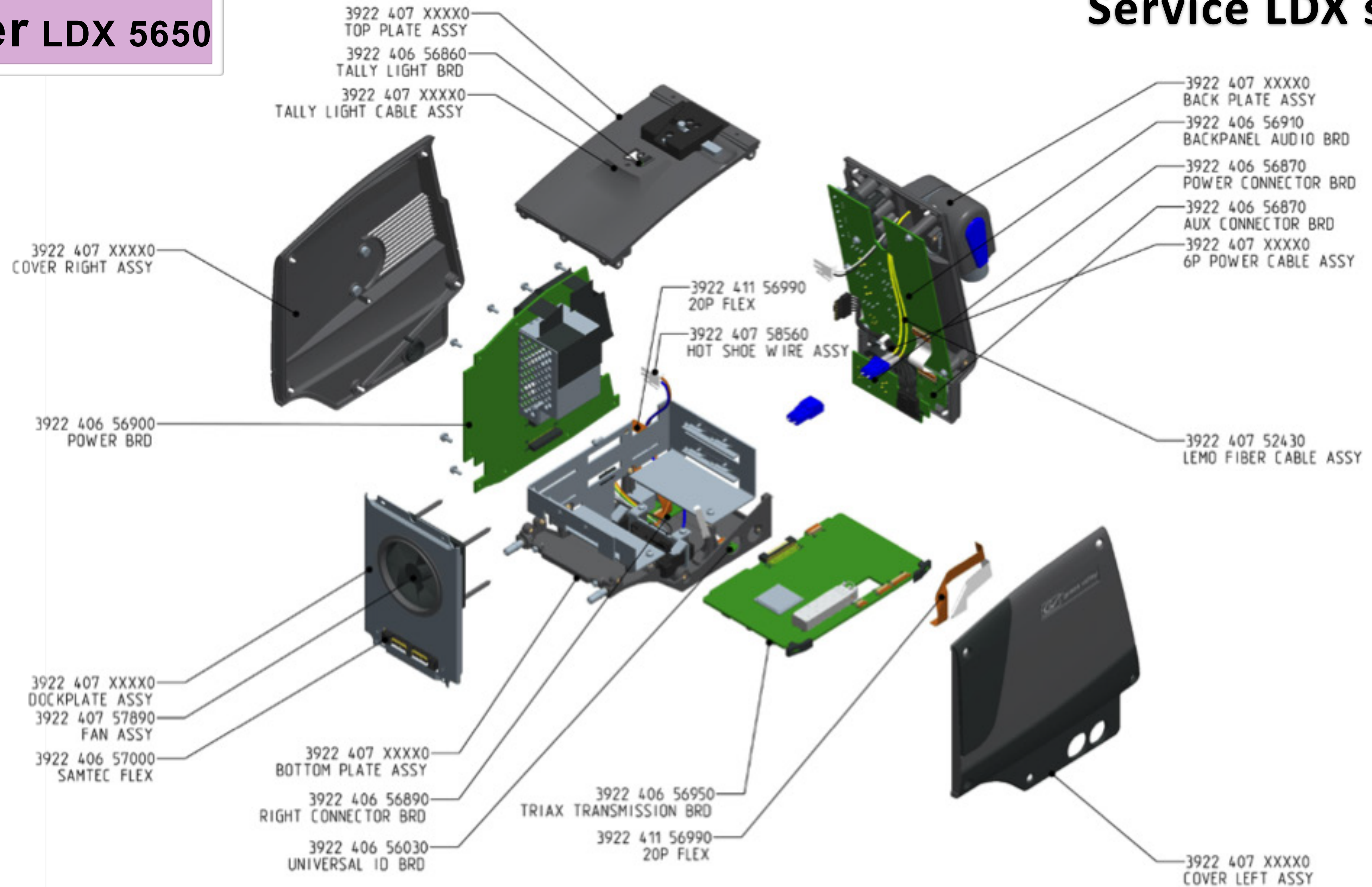
3G Triax LDX 5640

Service LDX series



3G Fiber LDX 5650

Service LDX series

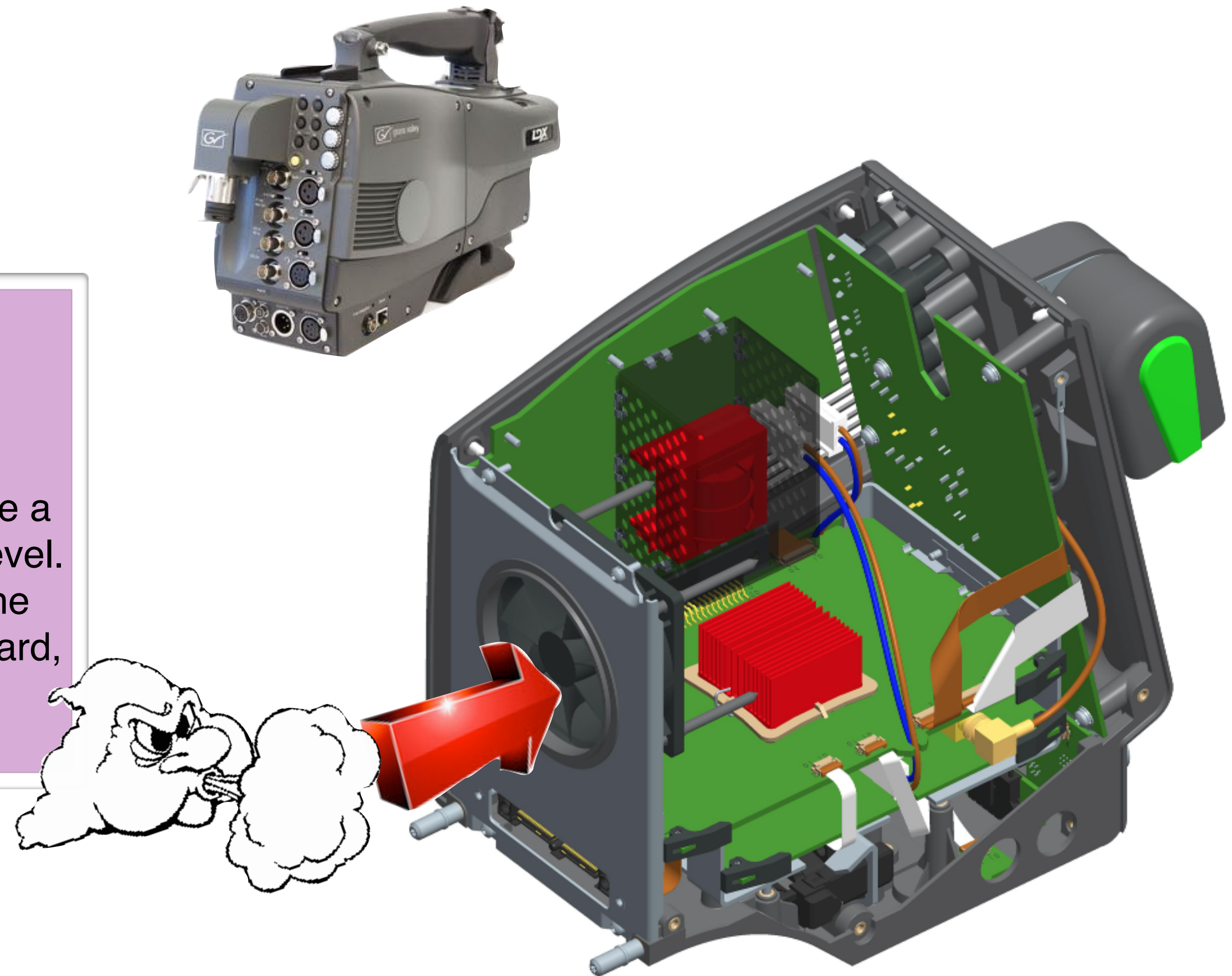


Cooling Triax/Fiber adaptor

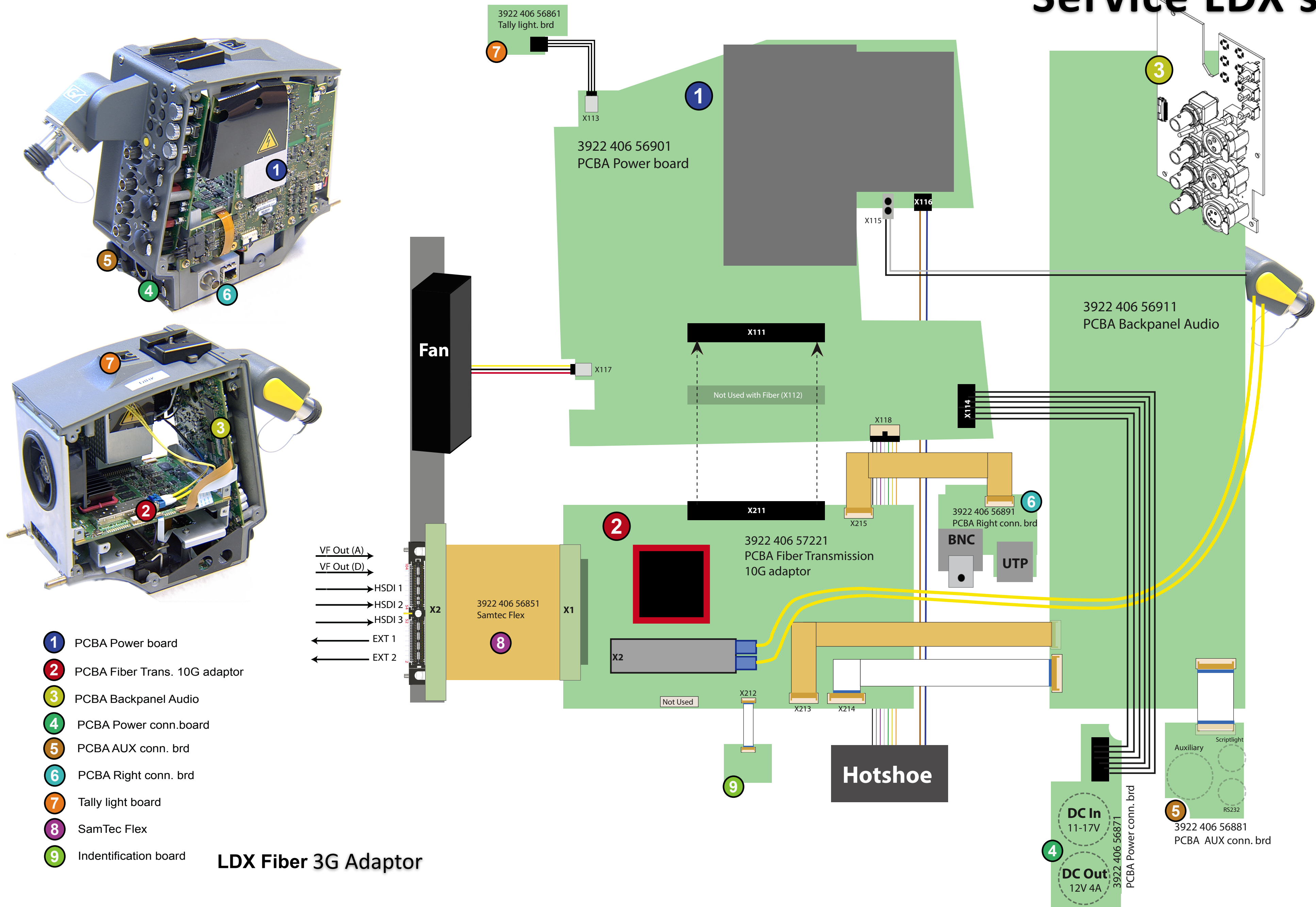
Cooling LDX 3G Adapter

The PCBs in the LDX 3G Adapter will be horizontally oriented which will improve the airflow in the adapter. The reduced air resistance will cause the fan to create a higher airflow at a lower fan speed and lower noise level. Furthermore the major heat sources in the adapter, the power converter and the fpga on the transmission board, will be positioned directly in the airflow

Do not touch the fan!



Service LDX series



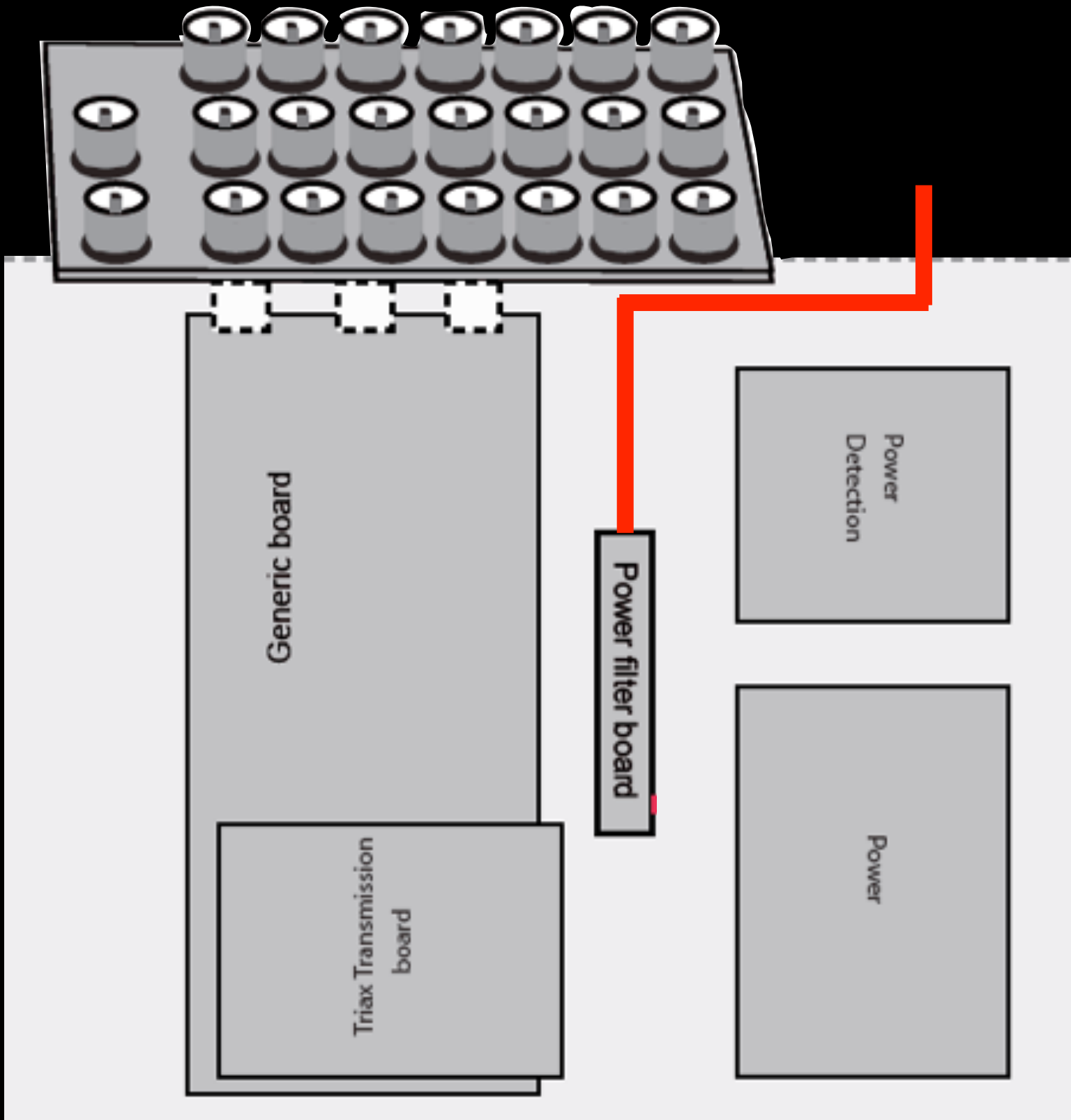
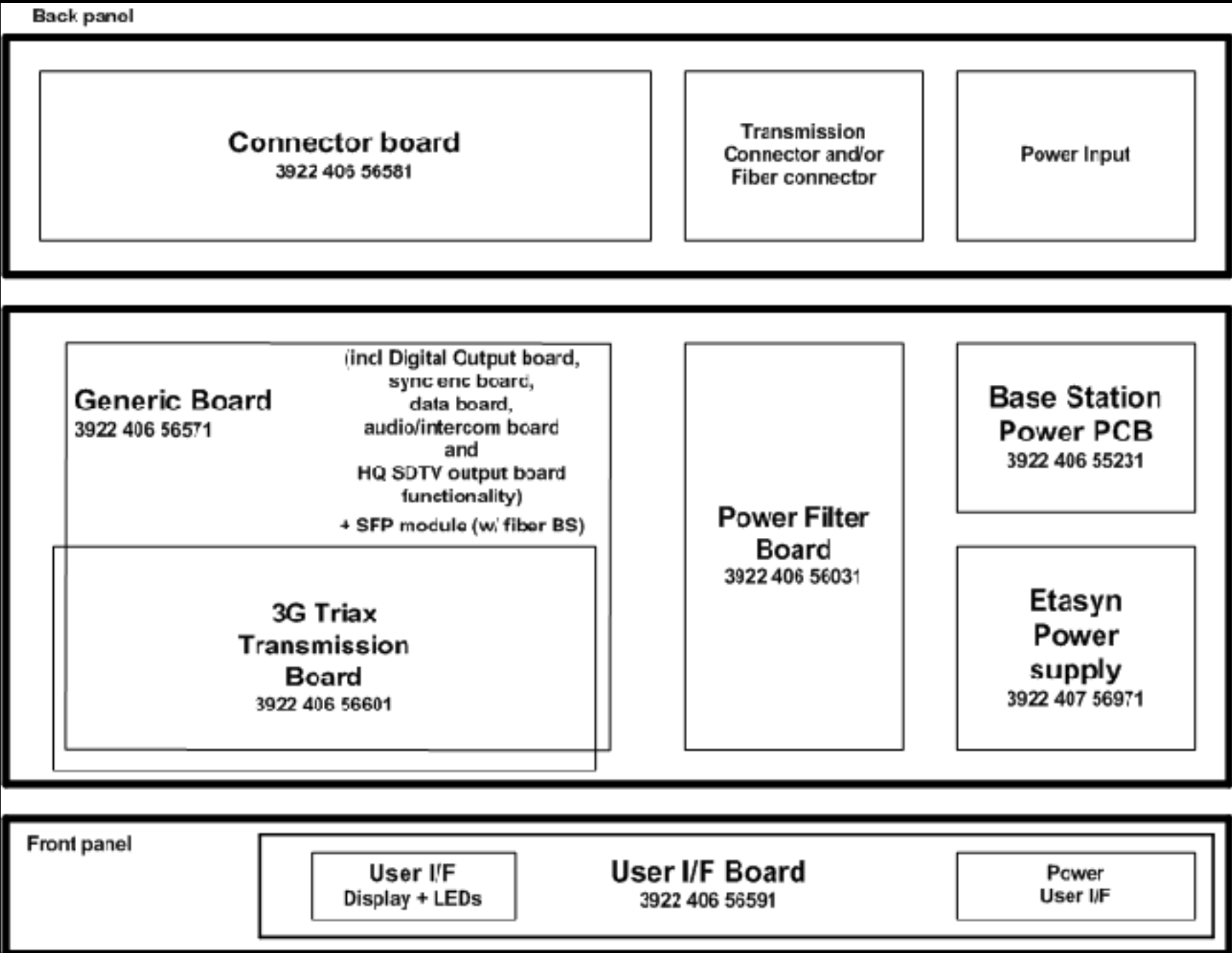
- 1 PCBA Power board
- 2 PCBA Fiber Trans. 10G adaptor
- 3 PCBA Backpanel Audio
- 4 PCBA Power conn.board
- 5 PCBA AUX conn. brd
- 6 PCBA Right conn. brd
- 7 Tally light board
- 8 SamTec Flex
- 9 Identification board

LDX Fiber 3G Adaptor

How to Service XCU Basestation

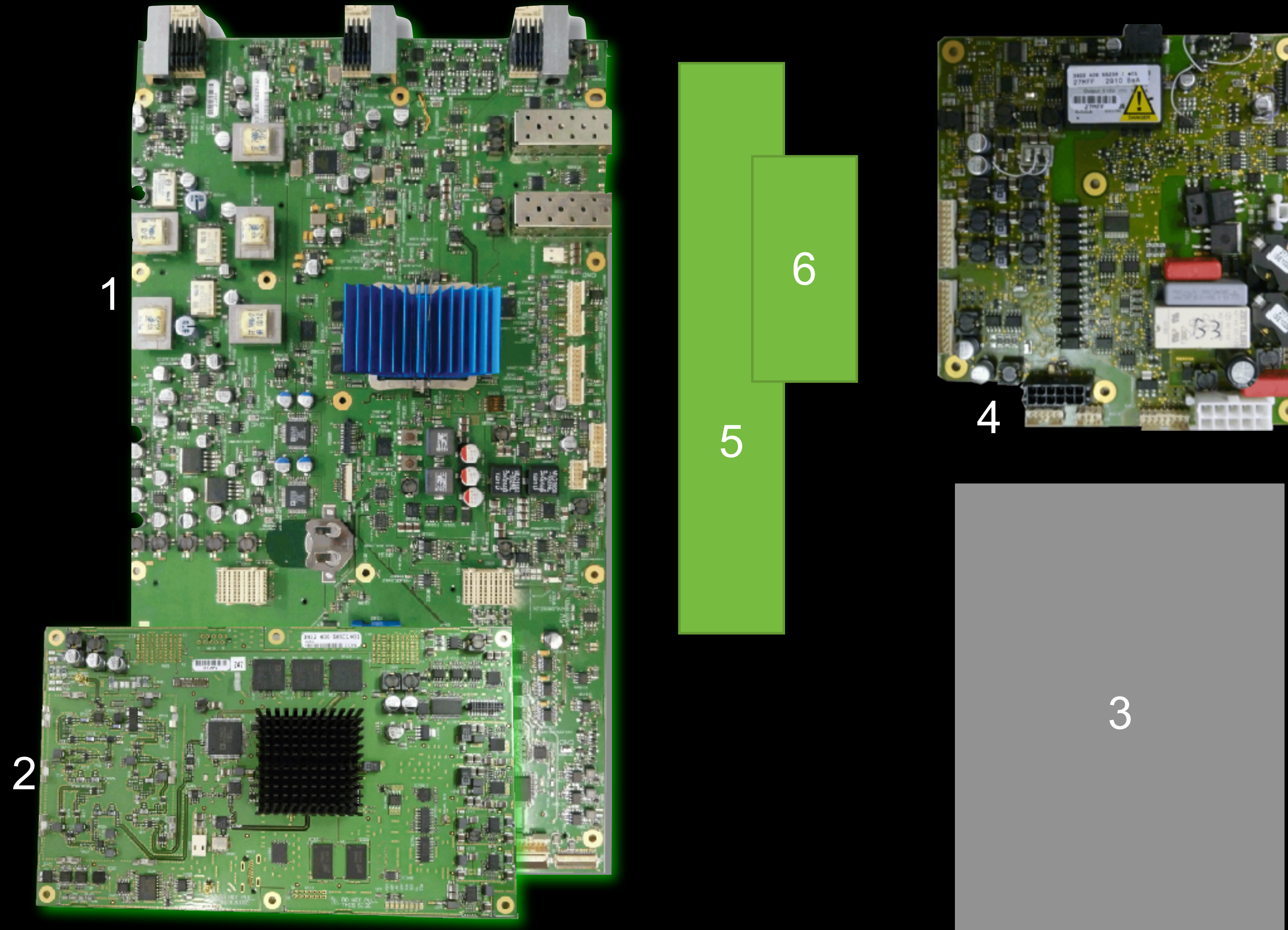


How to Service the XCU



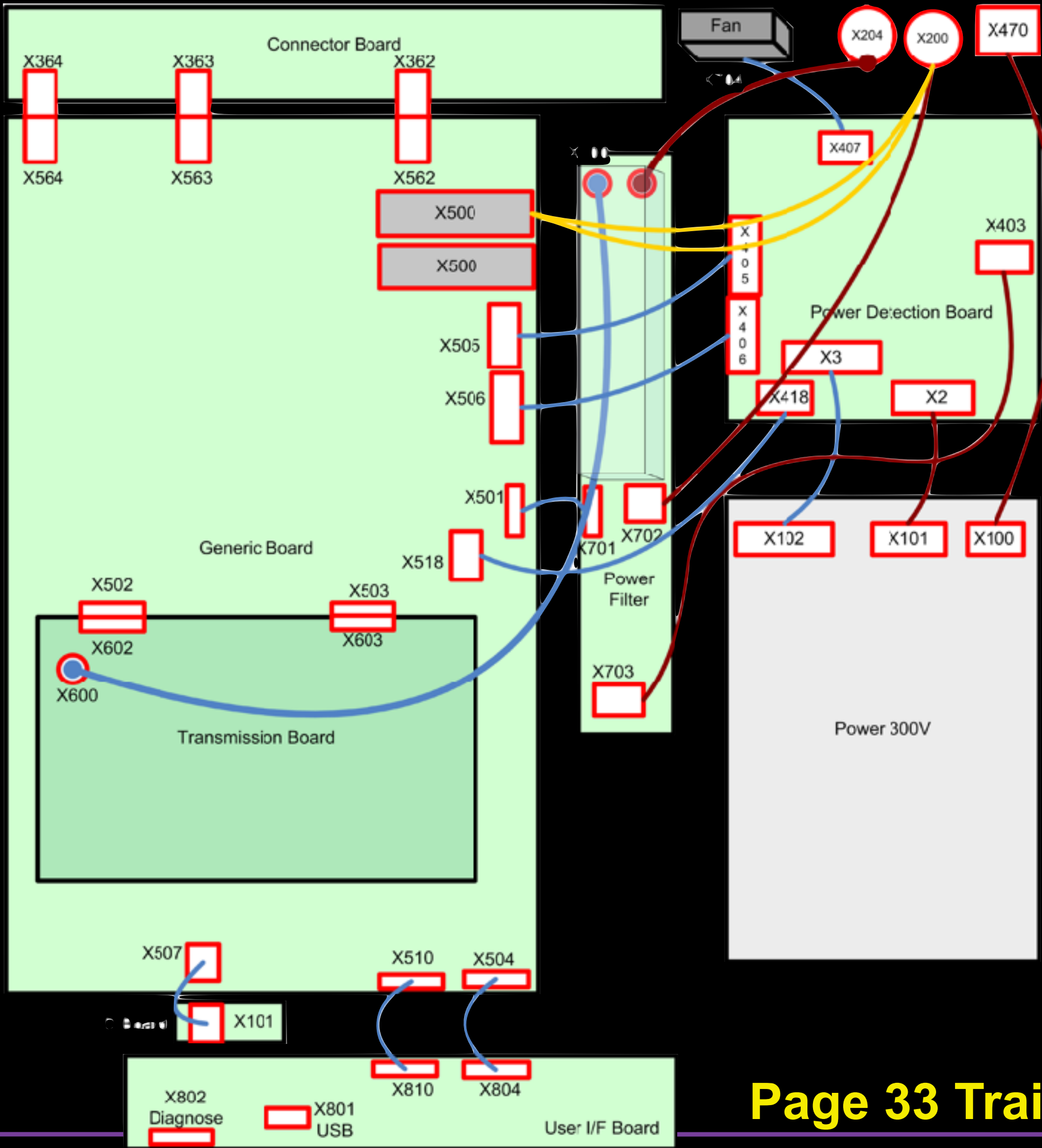
How to Service the XCU

- 1 - Generic board
- 2 - Triax Transmission
- 3 - Power unit
- 4 - Power Detection
- 5 - Power filter Fiber
- 6 - Power filter Triax
-



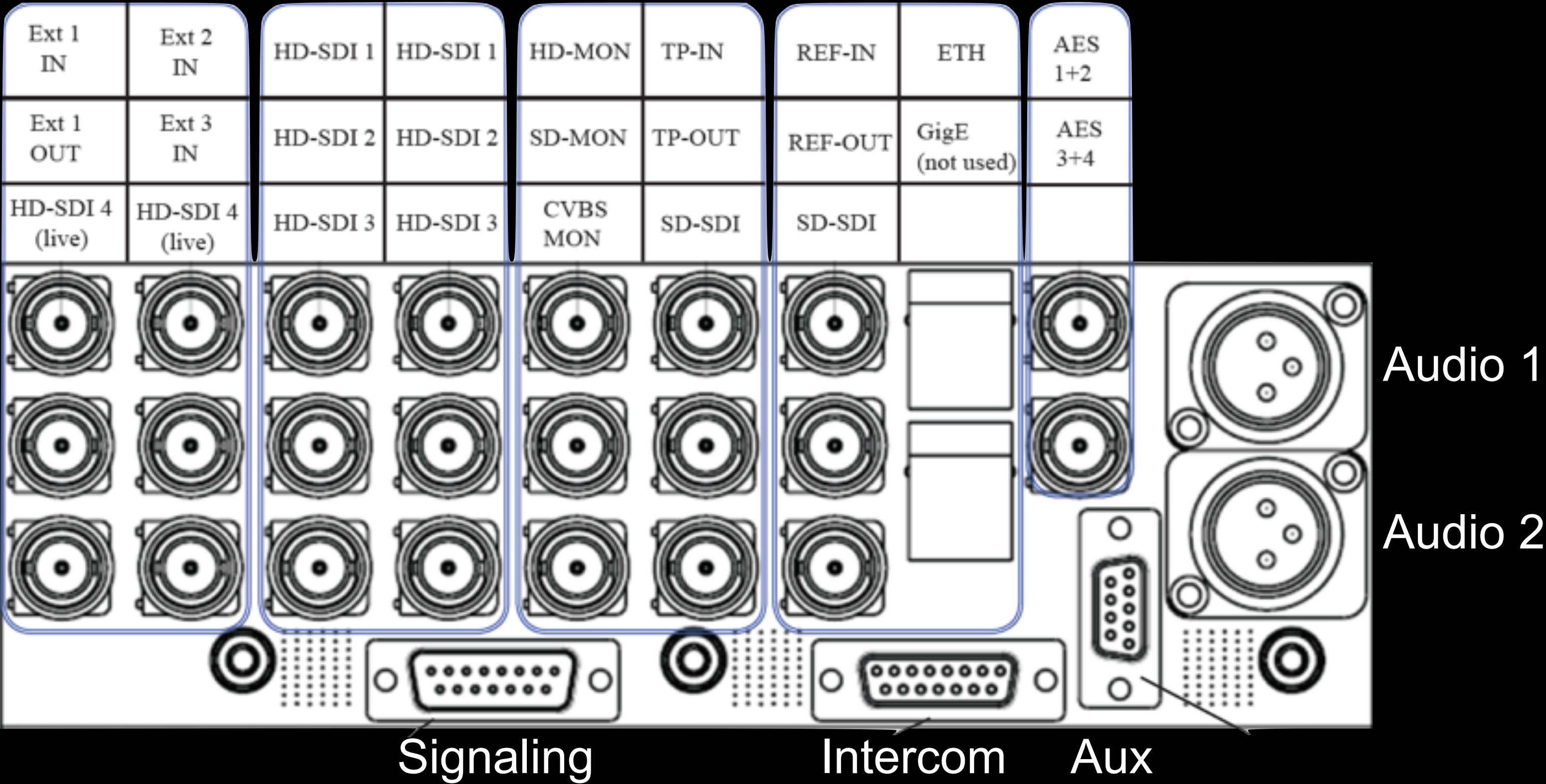
How to Service the XCU

For detailed
info use
Training or
Service manual.



Page 33 Training manual

How to Connect the XCU



3G basics Triax Connections

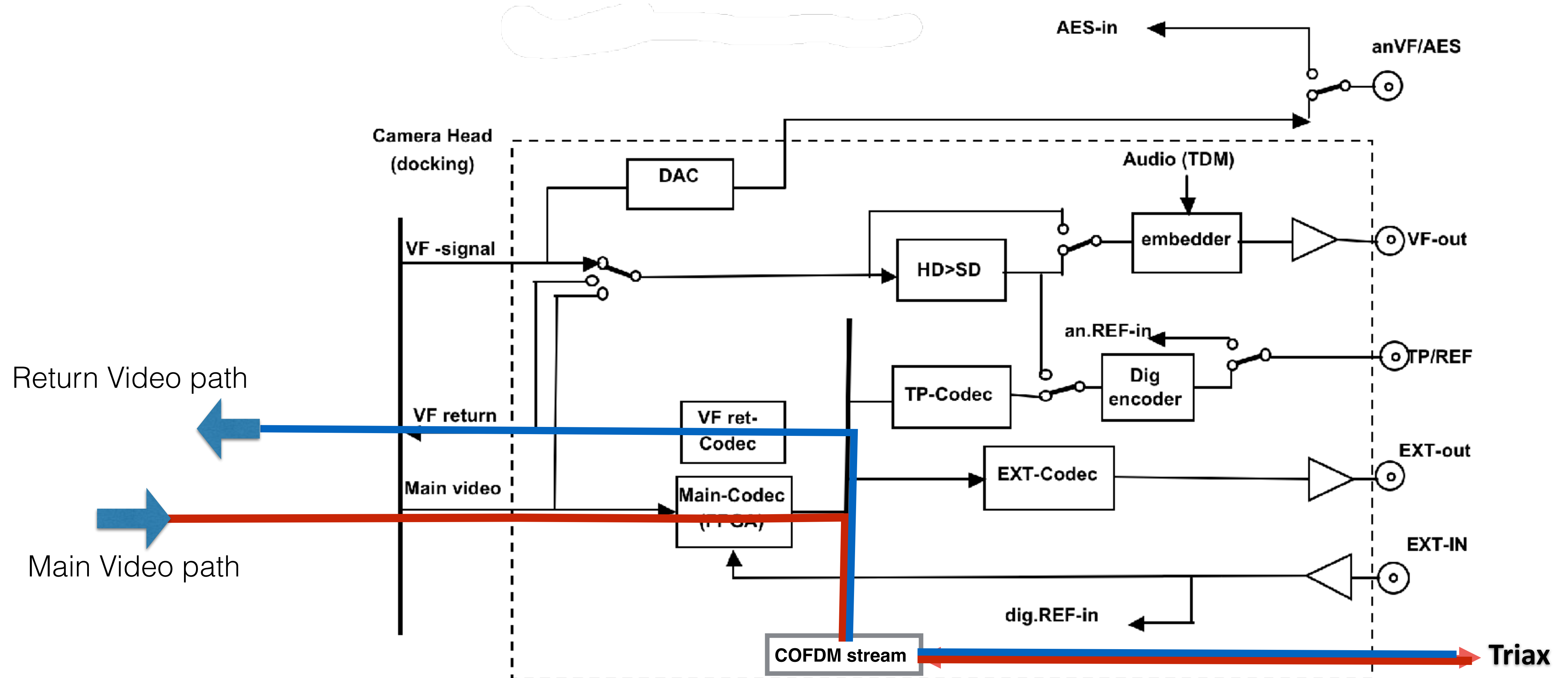
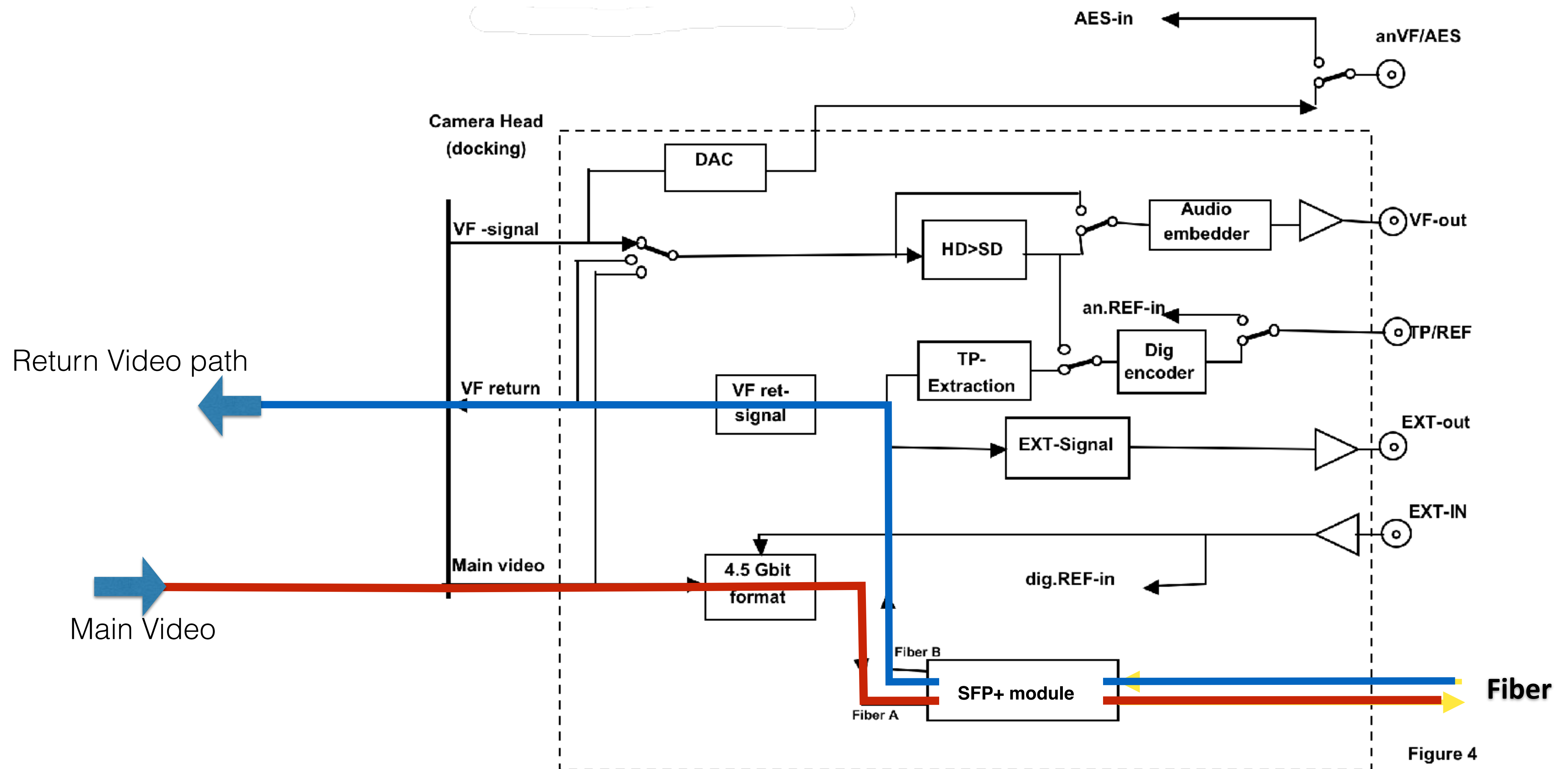


Figure 3

3G basics **Fiber** Connections



EXT 1,2,3 Connections

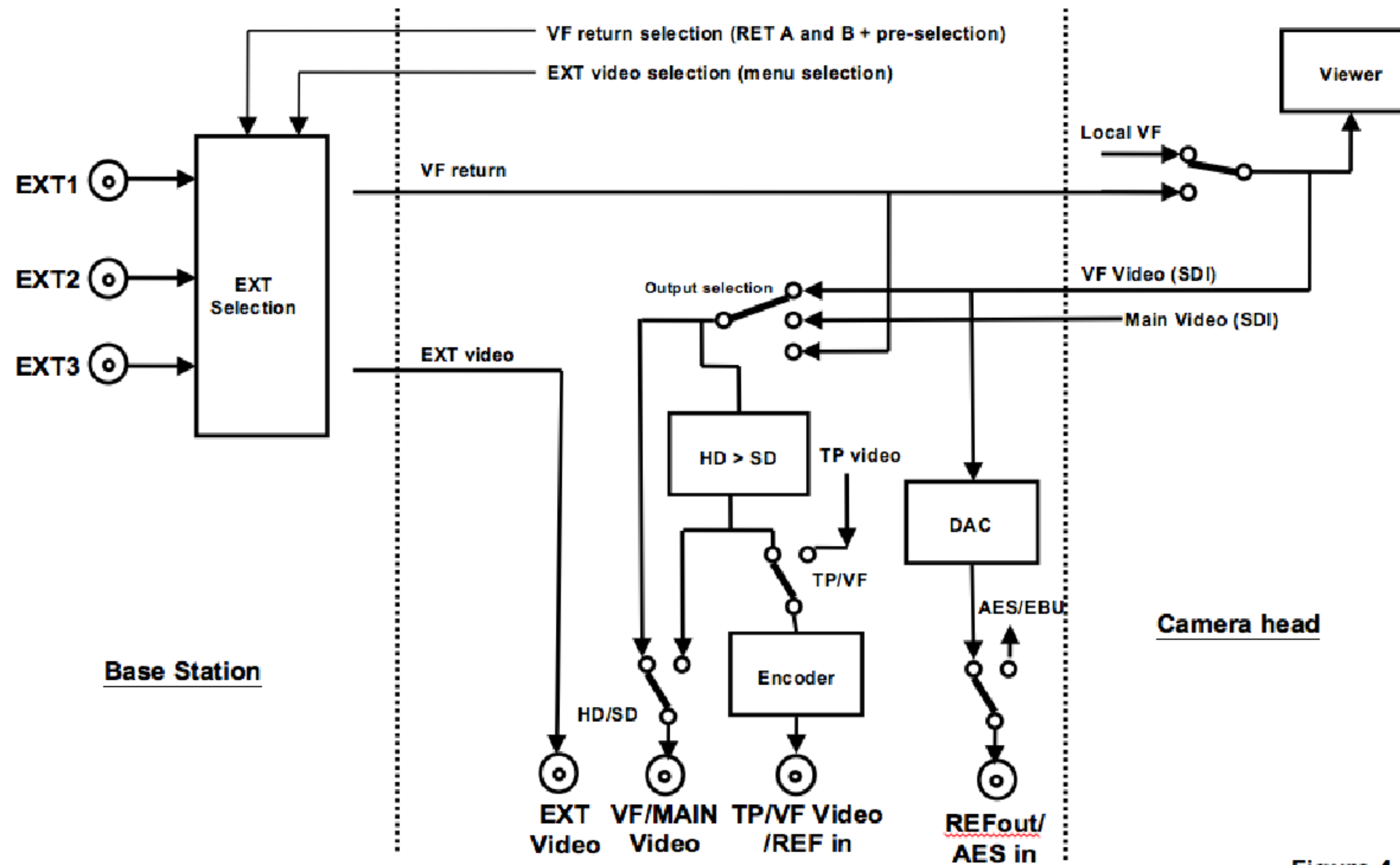
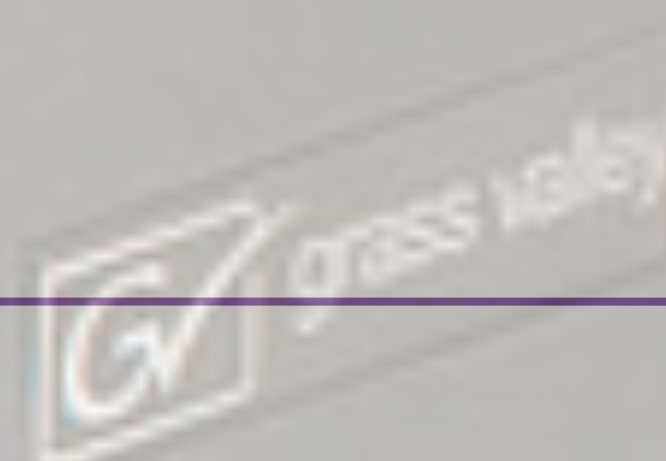


Figure 4

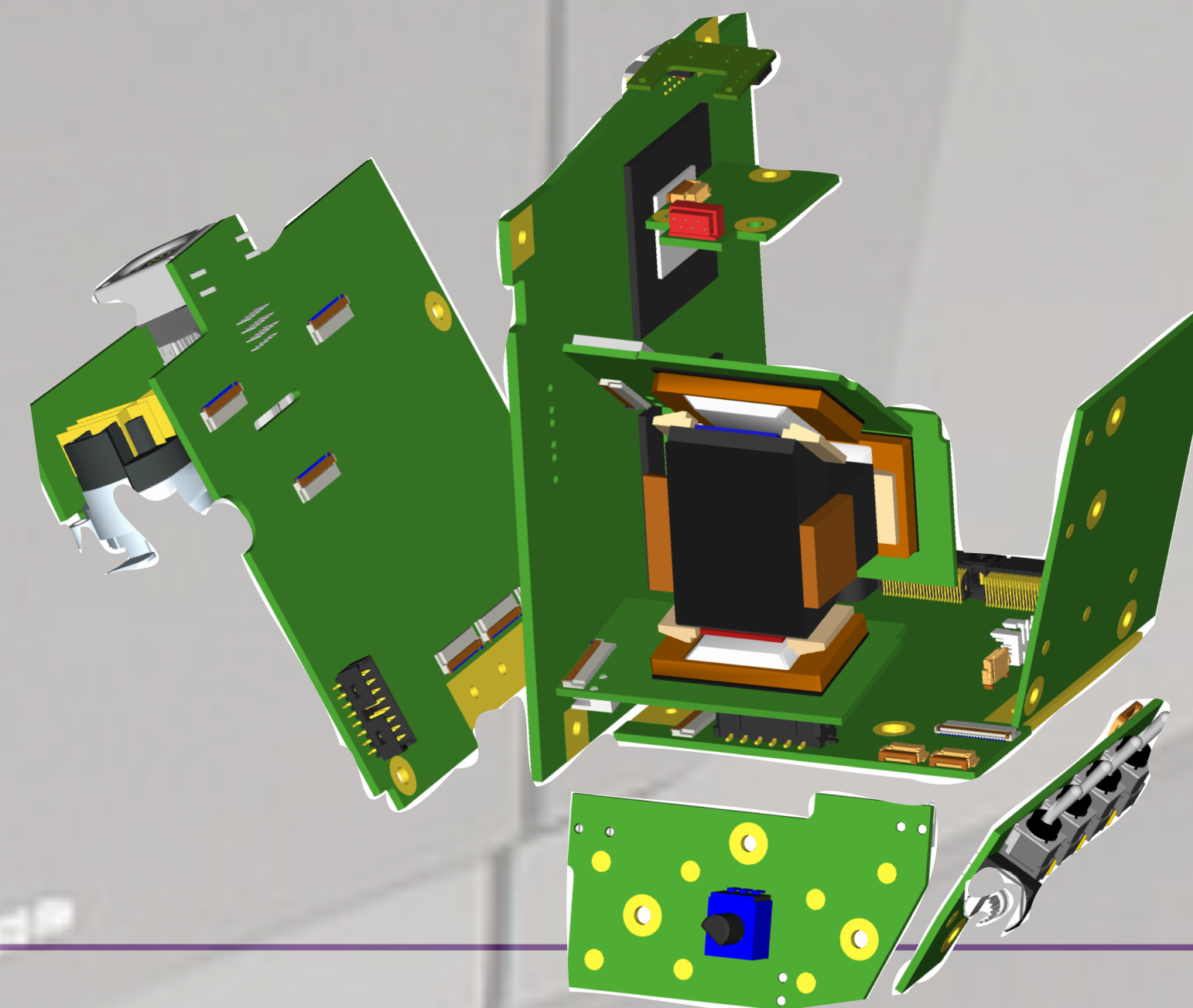
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Service LDX series

THERE SOME SEVERAL TOOLS AVAILABLE TO UPDATE AND CHECK THE CAMERA SYSTEM

- ◆ **SCRIPTER**
- ◆ **DIAGNOSTICS FROM CAMERA OR XCU MENU**
- ◆ **DIAGNOSTICS FROM MCP 400 / 450**
- ◆ **DIAGNOSTICS FROM CAMERA CONNECT TOOL**
- ◆ **THE LDX INSIDE TOOL**

For more details see training part 8



Service LDX series

Check after download procedure.

- ◆ **Collect Camera / XCU data (excel)**
- ◆ **Check OCP under DIAGNOSE package details**
 - OCP software
 - Camera package
 - XCU package
- ◆ **Check in Camera Menu Package version**
- ◆ **Check in XCU Menu Package version**
- ◆ **Check in OCP / MCP Menu software version**
- ◆ **Check in VF package version**
- ◆ **Check in Convertorbox Firmware version**
 - only for LDK 4426 (only possible with dongle)



Service LDX series

Where to download LDK / LDX software

◆ <http://www.ldkcamera.nl>

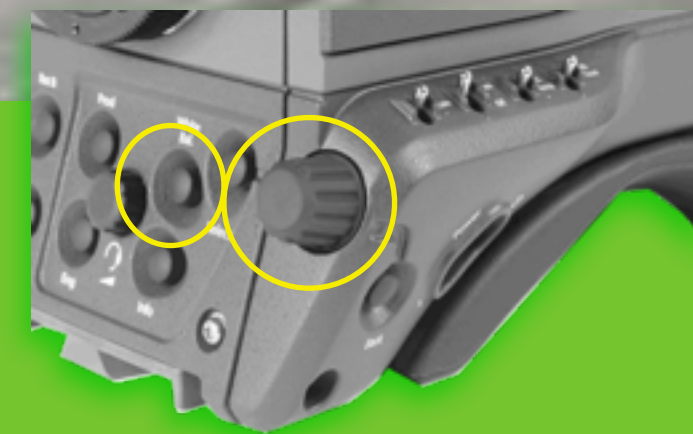
◆ Create you own directory structure:

- Cameras
 - LDX
 - LDK
- Adaptors
 - Triax
 - Fiber
- Basestations
 - XCU
 - BS 44xx
- Viewfinders
 - 7 inch
 - 9 inch
 - 2,7 inch
- Control
 - OCP
 - MCP



First Step to find your problem!

Basic SETUP procedure

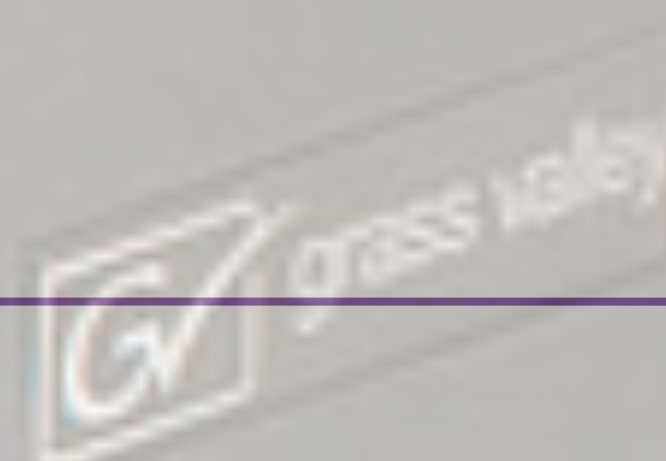


Step	Camera sw. panel User level 2,3	Menu Camera User level 2,3	OCP or MCP
A	Standard Recall GREEN Button	MenuFiles Standard Recall	Standard Recall FACTORY
B	Select AW1 or 2	Auto White	AW 1 / Auto White
C	IRIS		IRIS + MBlack
D		MenuVideo Flare	Flare

How to Service LDX *(quick system check)*

	Check	XCU	Adaptor	Camera	LCD VF	OCP	Diagnostics
1	Power	LEDs front	LED back-panel	LEDs (internal)	Picture / Menu	Communication	
2	Package important	BS Menu Diagnostics	Cam Menu Diagnostics	Cam Menu Diagnostics	VF Menu Diagnostics	OCP Menu Diagnostics	
3	Video	HDSDI	HDSDI	VF Display	Picture	--	
4	Communication	LEDs	--	Diagnostics	Diagnostics	Access	
5	Locking (compare with Ref)	HDSDI	HDSDI	--	--	OCP Menu Diagnostics	
6	Intercom B - C	Input Prod/Prog/Eng	Out Headphone Prod/Prog/Eng	--	--	--	
7	Intercom C - B	Output Prod/Prog/Eng	In Headphone CamMan	--	--	--	
8	Audio 1,2, AES	Out Micr. 1,2, AES	In Micr. 1 or front In Micr 2 , AES	--	--	--	

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Service LDX series

Knowledge Base Information

DON'T miss to check the GV Knowledgebase for FAQ's and solutions... :

http://mygrassvalleyportal.force.com/gvknowledge/pkb_Home?l=en_US

