![Espedeo Supra™ logo]

Supra-5000

Digital Cinema and Secured Media Projection System

Installation Manual

August 02nd, 2023

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Thank you for purchasing the Espedeo Supra-5000 Digital Cinema and Secured Media Projection System from Espedeo Holdings Ltd.

To ensure proper operation and to maximize the value of the Espedeo Supra-5000 Digital Cinema and Secured Media Projection System, please review this Manual. It will guide you through all the features and benefits of the Espedeo Supra-5000 Digital Cinema and Secured Media Projection System.

COPYRIGHT NOTICE

MANUAL DISCLAIMER

There might be slight differences depending on the software version Espedeo products are running when compared to the version available at the time of writing this manual. The contents, features and specifications stated in this manual are subject to change without notice due to continuous product development and improvements. In no other event shall Espedeo Holdings Ltd. be liable for any loss of profit or any other commercial damages, including but not limited to special, consequential or other damages.

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference and
(2) this device must accept any interference received, including interference that may cause undesired operation.
Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1. About this Manual

1.1. Using this Manual

We highly recommend that you read this manual before you install and operate the **Espedeo Supra-5000 Digital Cinema and Secured Media Projection System**. Within this manual, you will find important information regarding safety, installation, maintenance and other important notes which need to be considered while handling and using this unit.

Please take the time to read this Installation Manual carefully and keep it for future reference.

2. Safety

2.1. General Safety

- The equipment shall be installed, operated and maintained by qualified professional personnel authorized by Espedeo Holdings Ltd.
- All warnings listed on this projector and in this manual should be observed.
- Please strictly observe all instructions on operations and usage of the projector.
- Please strictly observe all local installation specifications.

⚠ **CAUTION:**
The specifications described in this section are essential to ensure the performance of the projector. Non-conforming operations will lead to warranty failure.

2.2. Electrical Safety Precautions

This equipment complies with safety standards stipulated for information technology equipment that are subject to stringent requirements for the use of critical safety assemblies, components, materials and insulators in order to protect users and operators from the following hazards:

- Electric shock
- Energy-related hazards
- Fire
- Heat-related hazards
- Mechanical hazards
- Radiation
- Chemical hazards

2.3. Terms

A. **Maintenance Personnel**: Refers to those who have undertaken appropriate technical training and have practical experience in avoiding potential hazards within their work range (including but not limited to high-voltage electrical and electronic equipment and high-brightness projectors).
B. **Users**: Refers to all persons except maintenance personnel or personnel who have undertaken appropriate technical training. Authorized users are allowed to operate professional projection systems.
C. **Restricted Access Area**: Only Maintenance Personnel can enter the restricted access area or only if a user is aware of the reasons for restricting access to the area and has taken preventive measures. A person must use a specific tool, lock or key or take other safety measures to access this area. Additionally, access to this area is controlled by the specified agency.

2.4. Laser Safety Precautions

This product is classified as **Class 1** Laser Product and complies with **IEC 60825-1: 2014** and **IEC 62471-5: 2015 Risk Group 2 (RG2)**.

To ensure safe operation, read all laser safety precautions mentioned below before installing and operating the projector:

- **Class 1 Laser Product**. DO NOT deliberately look or stare into the beam, which can cause injury to the retina in the back of the eye.
- This projector uses an extremely high brightness laser. Never attempt to look directly into the lens or the light beam. The bright light may result in permanent eye damage. (**Risk Group 2 of IEC 62471-5:2015**).
- When switching ON the projector, make sure no one within the projection range is looking into the lens.
- Keep any reflective objects out of the light path of the projector. Glass and shiny surfaces can reflect the light beam from the lens as the light path is extensive and the reflective beam can cause unpredictable incidents such as fire hazards or eye injuries.
- Any operation or adjustment not specifically instructed by the Espedeo Supra-5000 Manuals creates the risk of hazardous laser radiation exposure.
- Do not open or disassemble the projector as this may cause damage by the exposure of laser radiation.
- Failure to follow the control, adjustment or operation procedures may cause damage by the exposure to laser radiation.

2.5. Important Safety Instructions

2.5.1. Preventing the Hazard of Electric Shock

- The projector should use AC power. Ensure that the main voltage matches the rated power of the projector. If the installation environment cannot meet the AC power requirements, please contact the electrician.
- The installation can only be carried out by qualified technical personnel in accordance with local electrical codes and regulations.
- This equipment uses a three-connector power cable, including a single-phase wire used for protective earthing (PE). If the installation environment cannot meet the AC power requirements, please contact the electrician. Please do not ignore the role of PE.
- The power input socket delivered with the projector only supplies power to the projector. Do not connect other devices to this power input socket.
- The circuit breaker in the power supply circuit of the projector is a universal disconnector that cuts off the power supply of the complete set of devices.
- The projector is completely powered off only after you turn off the projector and remove the power cable.
- Do not place anything on the power cable. Please arrange the power cable properly so as not to trip the pedestrian, be stretched or touch the hot surface.
- If an extension cable must be used, the rated current of the extension cable shall be at least equal to the rated current of the projector. If the rated current of the extension cable is lower than that of the projector, the extension cable will be overheated and catch fire.
- If the power cable is damaged or the projector is dropped and damaged, do not operate the projector until the qualified maintenance personnel have checked and confirmed that it is operational.
- Please do not place any objects in the housing slot of the projector, as they may touch dangerous voltage points or short circuits, causing a fire or an electric shock. If any liquid or solid enters the housing, remove the plug and seek help from the professional maintenance personnel before continuing to use the projector.
- Please do not expose the laser light source to rain or moisture. It is recommended to place the projector in a well-ventilated area away from fire and direct sunlight.
- Please do not immerse the projector in water or other liquids, nor contact with water (including splashing water) or other liquids.
- To better protect the projector during lightning storms or prolonged unattended and unused conditions, remove the power plug from the power socket and disconnect the communication cables. This protects the projector from being damaged by a lightning strike or AC wire surge.

⚠ **WARNING:**
A large current leakage may occur. Therefore, the projector must be grounded properly before it is powered ON.

2.5.2. Preventing Fire

- The design and manufacture of the projector light source conform to the most stringent safety requirements. During normal operating, the projector light source releases heat through the outer surface and the ventilation duct, which is normal and safe. Putting the flammable material near the projector may cause the material to ignite itself, causing a fire. Once a fire occurs, be sure to use sand, CO_2 or dry powder fire extinguishers. Please do not use water to extinguish a fire when an electrical fire occurs.
- Please do not block the cooling fan of the projector, nor block the air exhaust vents around the cold-water tank. Please do not place any flammable objects or materials around the laser light source.
- The projection room must be well ventilated or have a cooling device to avoid heat accumulation. The hot air discharged from the projector must be able to be discharged to the outside of the building.
- Store the projector until the laser light source is completely cooled down. Before storing the projector, unplug the power cable from the projector.

2.5.3. Preventing Personal Injury

- To prevent personal injury and physical damages, please read the manual and understand the meaning of all labels on the equipment before installing the light source kit, inserting the power plug into the power outlet or commissioning the projector.
- To prevent personal injury that would necessitate medical care, please exercise caution when handling the projector because the laser light source is heavy.
- Before installing the laser light source to the projector or removing the laser light source from the projector, please turn off the power and unplug the power cable.
- The "hazard distance of laser" needs to be evaluated for the actual application of the Cinema products.

⚠ **WARNING:**
High-intensity light. Do not look into the lens. High brightness will cause damage to the eyes.

⚠ **WARNING:**
This is a **Class A** device that may cause radio interference in a residential environment.
In such conditions, the user may need to take practical countermeasures against interference.

2.5.4. Preventing damage to the Projector

- In order to keep well air circulation and to ensure compliance with the Electromagnetic Compatibility (EMC) requirements and safety requirements, be sure to use the projector with all covers properly installed.
- Properly keep the original shipping containers and packing materials. You can use them again when you need to transport the equipment. To maximize the protection of the equipment, re-package it in accordance with the original packaging upon factory delivery.
- Before cleaning the equipment, remove the power plug from the power socket. Do not use cleaners or spray cleaners, but use a damp cloth for cleaning. Do not use irritating solvents, such as thinners, gasoline or corrosive cleaners, as they can cause damage to the housing. You can use a damp cloth and a mild detergent to remove stubborn stains.
- The maximum rated ambient temperature is 35°C.

2.5.5. Power cable and accessories

- Be sure to use the power cable, power plug and socket that comply with the local rating.
- Please use only recommended AC power cables. Do not attempt to turn ON the power if the AC power and the power cable are not within the specified voltage and power range.
- Please use only the recommended accessories. Use of other accessories may cause fire, electric shock or personal injury.

⚠ **CAUTION:**
Improper grounding, wiring or incorrect use of the projector will result in electric shock.

> ⏚ **Ground Protection**: The equipment shall be connected to a grounded power socket. Before connecting the power supply, check the high-leakage current and ground cable.

2.5.6. About Repair

- Please do not repair the equipment privately because opening or removing the protective cover may expose you to high voltage and face an electric hazard.
- If you attempt to change the internal control functions set upon factory delivery or to change other control settings that are not specifically addressed in this manual, it will cause permanent damage to the laser light source kit and void the warranty.
- When the following situations occur, remove the power plug from the power socket and allow qualified maintenance personnel to repair the equipment:

    1. The power cable or power plug is damaged or worn out.
    2. Liquid enters the equipment.
    3. The equipment is exposed to rain or water.
    4. If the equipment cannot operate properly in accordance with the operation instructions, adjust only the adjustment apparatuses mentioned in the operating instructions because improper adjustment of other apparatuses may cause equipment damage.
    5. The equipment falls to the ground or the housing is damaged.
    6. If the equipment performance deteriorates significantly, ask the maintenance personnel for help.

- **Replacement parts**: When parts need to be replaced, ensure that the service technician uses replacement parts provided by the original factory or approved replacement parts that are identical to the original parts. Unauthorized alternatives may result in deteriorated performance and stability, causing fire, electric shock or other hazards.
Unapproved alternatives may void the warranty of the projector.

2.6. Content of Hazardous Substances

According to the "Electronic Information Products Pollution Control Management Approach" issued for controlling and reducing the electronic information products that may cause environmental pollution after discard, promoting the production and sales of low-pollution electronic information products and protecting the environment and human health, the hazardous substances that may be contained in this product are as specified in **Table 1**.

Equipment Name: Digital Film and Security Media Projection System.					Model (Type): Supra-5000	
Unit	Hazardous Substances and their chemical symbols					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Electrical Module	–	○	–	○	○	○
Light source	○	○	○	○	○	○
Head	–	○	○	○	○	○
Extranet components	–	○	○	○	○	○
Circuit Board Components	–	○	○	○	○	○

Note 1: "Exceeding 0.1 wt %" and "exceeding 0.01 wt %" indicate that the percentage content of the hazardous substance exceeds the reference percentage value of presence condition.

Note 2: "○" indicates that the percentage content of the hazardous substance does not exceed the percentage of reference value of presence.

Note 3: The "–" indicates that the hazardous substance corresponds to the exemption.

Table 1

The numbers in the circle represent the normal environmental lifetime of the product. **Espedeo** encourages users to hand over the product to local organizations with state-recognized recycling qualifications, in compliance with the state laws and regulations on the recycling of waste electrical and electronic products. **Espedeo** provides a variety of programs and services to help equipment owners recycle the products.

⚠ **NOTE:**
In view of the different provisions of the EU and China for RoHS, the projector complies with the EU RoHS directive (directive for restrictions on the use of certain hazardous substances in electrical and electronic equipment).

⚠ **WARNING:**
Handling the power cable of this product can expose you to chemicals, including lead, known to the State of California to cause cancer, birth defects or other reproductive harm. Proposition 65 is a California law that mandates companies to inform consumers of California about minuscule levels of chemicals found in their products sold and purchased within the state of California. Though a product may contain a Proposition 65 warning label or marking, it does not mean the product is a threat or danger to the consumer. Espedeo Holdings LLC is committed to the quality and safety of our products and consumers and we comply with necessary government requirements accordingly. For more information go to www.P65Warnings.ca.gov.

2.7. Product Safety Labels

I. **Laser Warning Label**: Describe the laser levels and compliance standards.

II. **Label Description:**
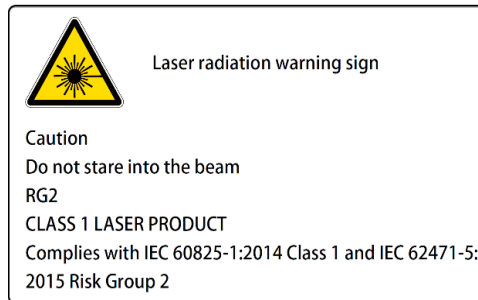
III. **Label Position:** Position of the laser warning label, as seen in **Figure 1**.
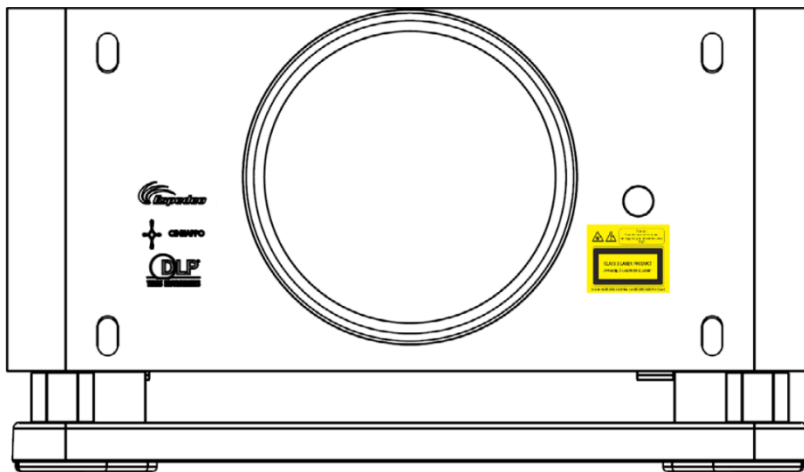
Figure 1: Laser Warning Label

3. Product Introduction

3.1. Unboxing Procedure

① Remove the top lid and open the Main box. Read the content on the Yellow *'Transport Warning'* label on the carton flap carefully.

② Take out the Accessory box and Lens box located between the right and left foam inserts.

③ Remove the left and right foam inserts on top of the projector.

④ Lift and remove the Main box to access the projector. Please note that the Main box does not have any bottom flaps.

⑤ Lift the projector and place it on a surface that complies with the 'Transportable Area' instructions specified on the *'Transport Warning'* label.
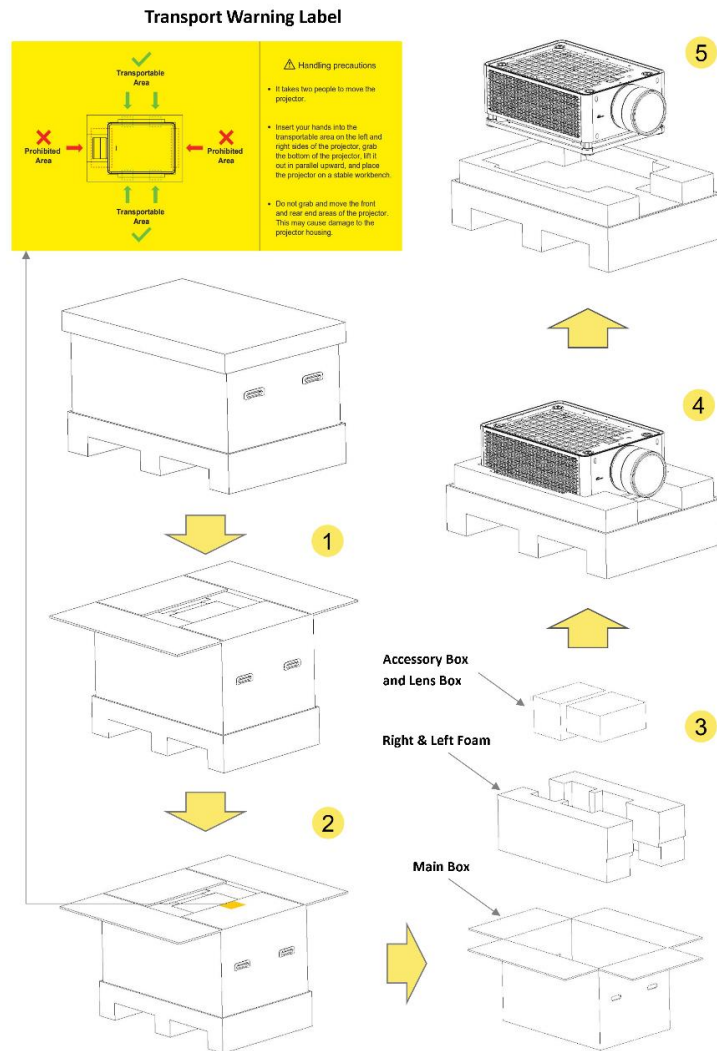
Figure 2: Supra-5000 Unboxing procedure
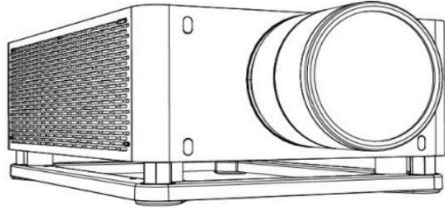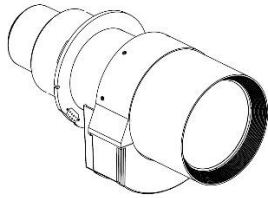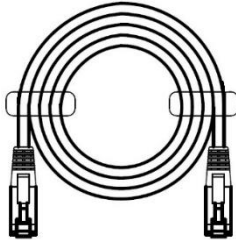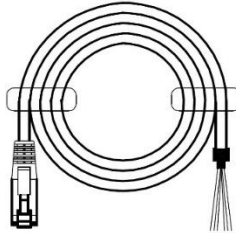
⚠ **NOTE:**
Please retain the original packaging for possible RMA shipment in the future.

3.2. Packing List

When unboxing the Espedeo Supra-5000 package; please check the contents in the box against the packing list mentioned in **Table 2**:

Sr.No.	Part Description			Quantity
①	**Projector**	**Espedeo Supra-5000**		1 PCS.
②	**Lens Box**	**1.28-1.92:1 Standard Lens#**		1 PCS.
③	**Accessories Box**	**AES Audio Cable (10M)**		1 PCS.
④		**GPIO Cable (10M)**		2 PCS.
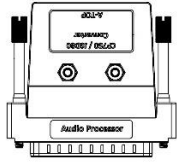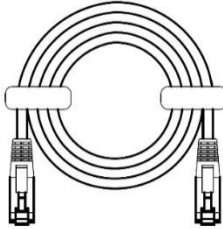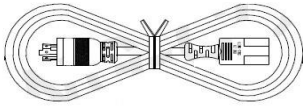
⑤		**RJ-45 to 25PIN Male CP750/JSD80 Audio Converter V2**		1 PCS.
⑥		**Cat5e Cable (10M)**		1 PCS.
⑦		**Power Cord**[*]		1 PCS.
⑧		**SPB2 Top Cover Key**		1 PCS.
⑨		**Red Dot A4 leaflet**		1 PCS.
⑩		**User Manual**		1 PCS.
⑪		**Installation Manual**		1 PCS.
⑫		**Quick Installation Guide**		1 PCS.

Table 2

[*] *The required plug type for the Supra-5000 power cord can be specified as per regional requirements. Please refer to* **Section 4.1.4** *for further details.*

[#] *1.28-1.92:1 Standard Lens is mentioned as an example. Please refer to* **Section 3.3.3** *for the other lens options available for Espedeo Supra-5000.*

3.3. Overview of the Projector
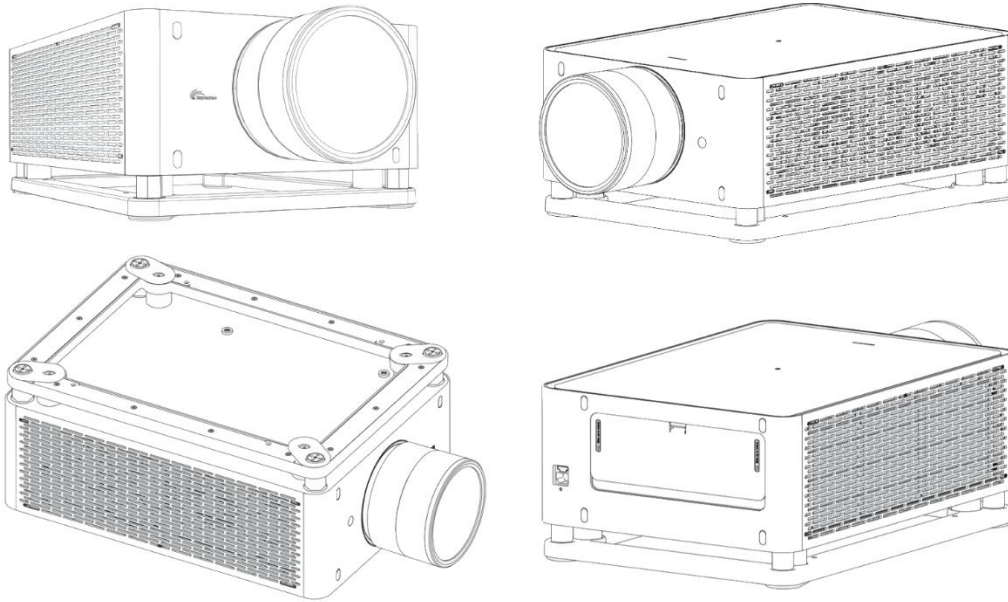
Figure 3: Supra-5000 Projector Overview

3.3.1. Air Filter

The Air Filter is located directly on the right side of the projector. This part can be replaced on-site. The Air Filter is responsible for filtering the intake air and then cycle it through the projector to cool the electronic components. The filter material has an open channel structure, adopts an electrostatic electret material which is 100% synthetic fiber and is resistant to moisture and common chemicals. This type of filter material is also mold resistant.

Maintenance Period: It is recommended to clean the filter screen every three months and replace it with a new one every six months. Alternatively, adjust the replacement cycle appropriately according to the on-site usage of the projector (refer to **Section 13.2** for more details).

Figure 4: Air Filter

3.3.2. Projector Status Indicator

The Status Indicator LEDs are located on the top panel of the projector and display only one status at any given point in time. For example: when the projector is working properly, the Green LED will be always ON. In case of any error or warning; the Green LED will turn OFF immediately and the Yellow or Red LED should start flashing. Refer to **Table 3** for the complete list of status indicators for the Espedeo Supra-5000 projector.
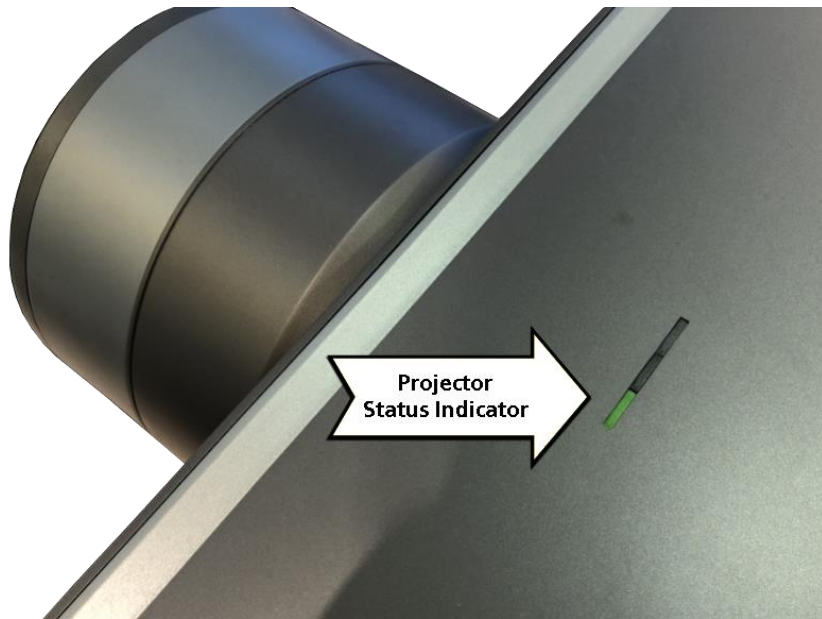
Figure 5: Projector Status LED Indicators

SN	LED Color	LED Status	Projector Status	Function
1	**Green**	**Steady ON Green**	**Power-on**	The projector is working properly.
2	**Green**	**Blinking Green (fast)**	**Power-on Process**	The projector is booting with the AC power or via the network wakeup function. The indicator blinks fast. After the power-on process with the AC power is completed, the green indicator stops blinking and becomes steady ON.
3	**Green**	**Blinking Green (slow)**	**Standby mode**	The projector is in Standby mode and can be woken up by an external device through the network. The blinking frequency is low.

4	Yellow	Blinking Yellow	Warning	A warning is generated. You can view the warning-related information using the Supra Command Center UI. After the warning is cleared, the Yellow indicator turns OFF.
5	Red	Blinking Red	Error	An error has occurred, which may affect the normal operation of the projector. You can view the error-related information using the Supra Command Center UI. After the error information is handled, the Red indicator turns OFF.
6	Red	Steady ON Red	Error	An error has occurred, resulting in a system shutdown.

Table 3

3.3.3. Lens

The projector is shipped with either a standard **1.28-1.92:1** HB motorized lens or a **1.58-2.49:1** motorized lens or a fixed ratio **0.8:1** lens.

The desired frame (image) width, projection distance (distance between the screen and the projector lens) and screen aspect ratio should be known to calculate the Projection ratio (Refer to **Figure 6**).

The Projection ratio is the ratio of the projection distance to the width of the screen. The Projection ratio should be within the range of the available lens ratios. Different models of projector lens have different projection ratios. Espedeo provides three types of lenses that you can choose from, as described in **Table 4**.
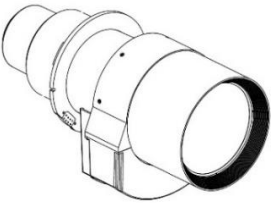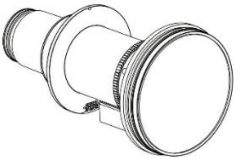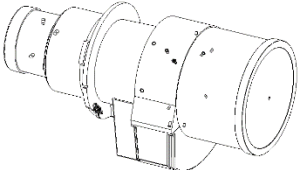
Product Specifications	1.28-1.92:1 Lens	0.8:1 Lens	1.58-2.49:1 Lens
Lens Image			
Throw Ratio	1.28 - 1.92:1**	0.8:1**	1.58 - 2.49:1**
F-number	F2.4	F2.4	F2.4
ZOOM/FOCUS	Motorized	Motorized	Motorized
Memorize position	Zoom/Focus	Focus	Zoom/Focus
Screen size	2.54m to 10.16m (8.33ft to 33.33ft)	2.54m to 10.16m (8.33ft to 33.33ft)	2.54m to 10.16m (8.33ft to 33.33ft)
Best performance Screen size	6.78m (22.25ft) @ TD = 7.67m (25.16ft)	6.78m (22.25ft) @ TD = 4.8m (15.75ft)	6.86m (22.5ft) @ TD = 9.6m (31.50ft)
MTF (93lp/mm)	> 65%	> 65%	> 65%
Maximum lens offset	V: ± 50% and H: ± 25%	V: ± 50% and H: ± 25%	V: ± 50% and H: ± 25%
Maximum light output	6000lm	6000lm	6000lm
Length	312mm	240mm	238.6mm
Weight	2208 ± 50g	1940 ± 50g	2340 ± 50g

Table 4

** Applicable for 0.49" DMD only. Measured as the throw distance against the projected area width.

Figure 6: Projection ratio calculation

$$\text{Projection ratio} = \frac{\text{Projection distance L}}{\text{FrameWidth W Frame}}$$

$$\text{Lens projection ratio} = \frac{\text{Projection distance L}}{\text{Projected Frame Width W Frame}}$$

$$\text{Projection ratio required} = \frac{\text{Projection distance L}}{\text{Frame width to project W Frame}}$$

3.3.4. Adjustable Foot

The adjustable feet can be adjusted to raise or lower the height of the projector to align the projected image on the screen. The height of the projector feet can be adjusted within the range of ≤ 15mm.

A specially designed VESA ceiling mount will be used, in case of ceiling mounting. Refer to **Section 11** for more details.

3.3.5. Video Source and Interface panels

- The Espedeo Supra-5000 can be connected to a Theatre Management System or TMS, using the network interfaces. The **GIGABIT Port 1** and **GIGABIT Port 2** on the DCMB are connected to the Content and Management Network of the Cinema respectively. The **LAN 2 Port** on the PIB is connected to the system interface of the projector and the DCMB. Refer to **Section 4.7** for more details.
- The video source is divided into DCP and HDMI content. DCP content is copied to the local storage via the **USB** interfaces on the DCMB and the content from an external HDMI source is played via the **HDMI IN 1** and **HDMI IN 2** interfaces on the PIB.

Figure 7: Supra-5000 Interface boards

3.3.5.1. Projector DCMB (Digital Cinema Media Block) Panel Connections

The DCMB or Digital Cinema Media Block is a digital cinema media server that is responsible for playback. The various connectors and indicators on the DCMB are shown in **Figure 8**.
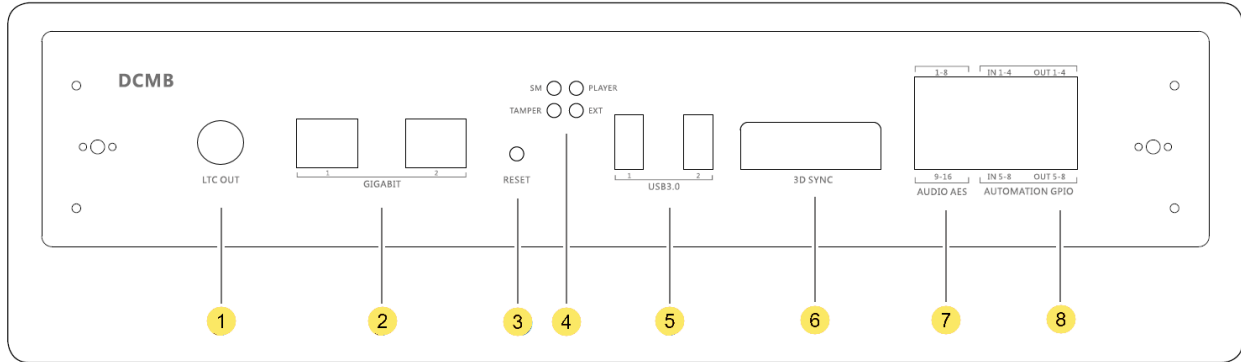
Figure 8: Digital Cinema Media Block or DCMB Connectors

SN	Name	Type	Function
①	LTC-OUT	BNC interface	This connector can be used to synchronize peripheral devices with the DCMB, through the linear timecode (LTC).
②	GIGABIT	2 x RJ-45 connector	Gigabit Ethernet (1000 Base-T) ports.
③	RESET	Button	This button can be used to reset the DCMB.
④	SM, TAMPER PLAYER, EXT	4 x LED indicators	These LEDs indicate the working status of the DCMB: ▪ **SM** indicates the Security Manager status of the DCMB ▪ **TAMPER** indicates the DCMB tamper status ▪ **PLAYER** indicates the playback status of the DCMB ▪ **EXT** indicates the module status of the DCMB **NOTE**: During normal playback operation, all four LEDs should be steady Green.
⑤	USB3.0	2 x USB A-type female connector	This port can be used to connect a local ingest source OR USB drive to download the DCMB logs and configuration.
⑥	3D SYNC	DB15 female socket	This can be used to output 3D synchronization signals when connected to 3D devices.
⑦	AUDIO AES	2 x RJ-45 connector	16/24-bit AES/EBU, 16 channels, 48/96 kHz.
⑧	AUTOMATION GPIO	4 x GPIO	These ports can be used for controlling automation devices.

Table 5

3.3.5.2. PIB (Projector Intelligence Board) Panel Connections

The PIB or Projector Intelligence Board is the main control module of the projector. The various connectors and indicators on the PIB are shown in **Figure 9**.
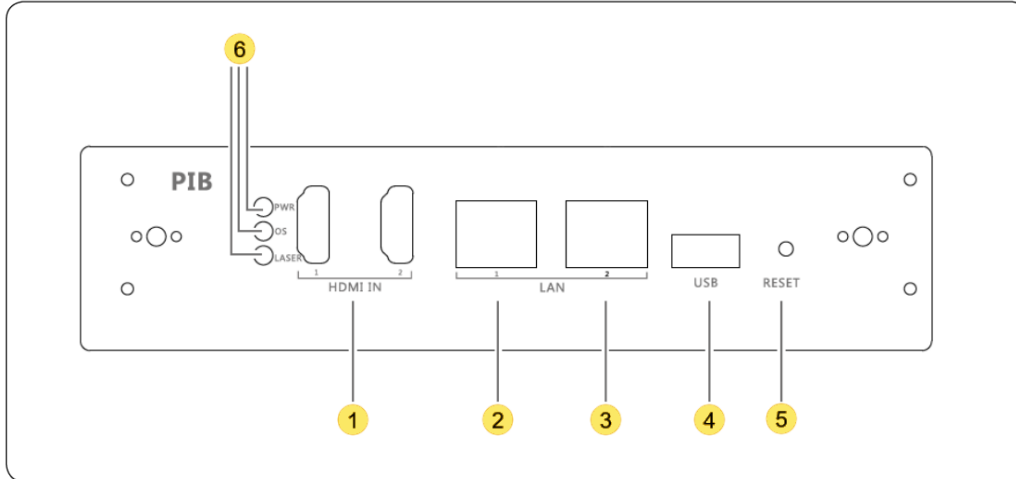
Figure 9: Projector Intelligence Board or PIB Connectors

SN	Name	Type	Function
①	**HDMI IN**	2 x HDMI IN	These ports can be used for content playback from an external HDMI source. Timing:1080p@60Hz
②	**LAN 1**	RJ-45 connector	Ethernet (100 Base-T) ports are used for local access by the main module as well as for remote NOC control.
③	**LAN 2**		▪ **LAN 1** IP Address can be modified ▪ **LAN 2** IP Address is fixed to <u>192.168.254.241</u>
④	**USB**	USB A-type female connector	This port can be used to upgrade the main control software of the PIB.
⑤	**RESET**	Button	If this button is pressed, the PIB is powered on, the main control chip enters the USB upgrade mode and the main control program can be upgraded (the upgrade can be implemented through a connected PC)
⑥	**PWR, OS, LASER**	3 x LED indicators	Indicate the status of the PIB power supply, main control OS and laser light source: ▪ **PWR**: PIB power status - The system monitors the power supply of the PIB. When the PIB power supply is normal, the LED indicator is steady on Green.

			▪ **OS**: Main control system status - The system monitors the main control chip. When the main control chip works properly after startup, the LED indicator rapidly blinks Green.
			
			▪ **LASER**: Laser light source module status:
			  I. **LED indicator is OFF**: The laser control module is in standby status or is not powered ON.
			  II. **LED indicator blinking**: The laser control module is waiting for startup.
			  III. **LED indicator is steady ON**: The laser control module works properly.

Table 6

4. Installation of the Espedeo Supra-5000

This section describes how to install, connect and optimize the Espedeo Supra-5000 for the best audiovisual quality. The projector supports two types of installation: forward mounting and ceiling mounting. Forward mounting is the installation method in which the projector is horizontally placed on the special base of the projector, with the magnetic cover of the projector facing up. Ceiling mounting is the installation method in which the whole projector is inverted and the projector is suspended from the ceiling using the **Espedeo VM-1140 VESA Ceiling Mount** or alternative ceiling mounting bracket, with the magnetic cover of the projector facing down.

4.1.   Requirements for the Installation Environment

Cinemas need to implement strict technical requirements and specifications for the projection environment, fundamentally to prevent or reduce the equipment problems caused by the unsuitable environment, to provide a strong technical guarantee for the digital projection system to operate smoothly.

4.1.1. Transport passageway and preparation of machine space

The narrowest part of the passage should be > 100cm, the narrowest part of the door/staircase of the projection room should be > 80cm and the turning space should be > 150cm.
The actual size of projector landing (including lens) is 803(L)×480(W)×275(H) mm, The maximum weight is 47kg (with standard 1.28-1.92:1 lens).

⚠ **CAUTION:**
- The maximum outer packing size and weight of the projector are 890(L)×560(W)×390(H) mm, Gross weight is 50kg.
- The fans are used to cool the projector. When installing the projector, you must leave enough space > 20cm on the front, top, left and right sides of the projector to ensure smooth ventilation. There should be an operating space of > 50cm on the rear side of the projector.

4.1.2. Environmental Requirements

- **Temperature of the projection room**: The operating temperature of the projector shall be 10 to 35°C (the ideal room temperature is about 20°C).
- **Humidity of the projection room**: The projection room shall be equipped with a refrigeration and dehumidification system and the humidity shall be kept between 10% and 85%. The projection room shall be equipped with a thermometer and hygrometer for regular monitoring.

- **Air Cleanliness of projection room**: The installation of the projector needs to be carried out without any dust or construction work being carried out in the projection room.
  The indoor air in the projection room should be kept clean. Smoke and lampblack should not be allowed to enter the projection room. If windows need to be opened in the projection room, air filters should be added. A neat office environment should be maintained, in compliance with the <u>Cleanroom Standard ISO 14644-1 Category 9</u>.
- **Air Conditioning**: When in forward mounting; the air outlet of the air conditioner should not be arranged above the projector to avoid condensation dripping into the machine. When in ceiling mount installation; the air outlet of the air conditioner shall be > <u>50cm</u> away from the projector.
- **Fire Sprinkler**: It is recommended not to arrange it directly above the projector to avoid unnecessary losses.

4.1.3. Espedeo VM-1140 VESA Ceiling Mount

The **Espedeo VM-1140** is a VESA ceiling mount designed for in-auditorium or in-home installation of Espedeo Supra-5000 Projector. With the help of the VM-1140, the Supra-5000 can be easily mounted to a concrete ceiling or truss. For more details regarding the contents of the ceiling mount kit, dimensions and the installation procedure, refer to **Section 11**.

4.1.4. Power Requirements

- The Supra-5000 projector will be installed with either one of two types of power supplies depending on the region the projector has been shipped to. Please check the labeling on the Supra-5000 packing (refer to **Table 7**) to know which type of power supply has been installed in the projector. Please ensure that the voltage and current rating of the power outlet to which the projector is connected is matched to the power supply installed in the Supra-5000.
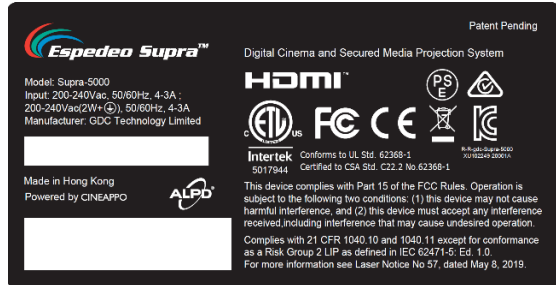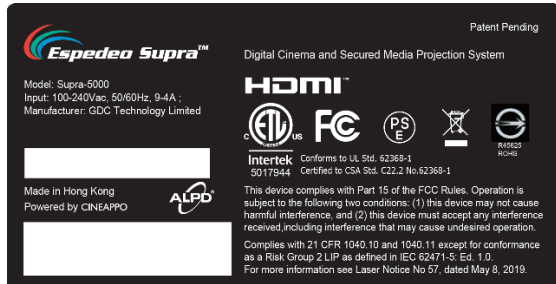
Type	Rating	Label
Type 1	**200-240Vac, 50/60Hz, 4-3A** [single phase] **200-240Vac (2W+ ⏚), 50/60Hz, 4-3A** [dual live line]	
Type 2	**100-240Vac, 50/60Hz, 9-4A** [single phase]	

Table 7

- The total power consumption is 750W. The power supply system should be stable and the voltage fluctuation range should be < 10%. The power consumption of the projection room should meet the rated power consumption requirements of the projector and UPS with voltage stabilizing function should be configured, if necessary.
- **Balance and distribution of AC power phase:** Try to avoid installing the projector's phase line, high-power electrical equipment and frequency conversion equipment (such as air conditioners, audio amplifiers, etc.) on the same phase line to avoid power interference. Pay attention to the distribution of each phase to make the phase electrical load as balanced as possible.
- When the equipment in the projection room is not turned ON; the measured zero-ground voltage should be < 1V.
- **Wiring**: Use multiple strands of flexible wires as the power line. For strong power, the wire should be routed independently. Do not mix it with weak wires in the same trunking.

- **Table 8** lists the various types of power plugs that can be provided along with the projector, for different regions.

Region	Rating	Plug Type and Description
United States	13A 250V	**L6-20P** industrial plug (twist-lock)
United Kingdom	10A 250V~	**Type G** plug with three rectangular pins and has an incorporated 10A fuse.
Europe	16A 250V~	**Type E** plug with two round pins and a hole for the socket's male ground pin
India	6A 250V~	**Type D** plug with three large round pins in a triangular pattern.
Korea	16A 250V~	**Type F** plug with two round pins and two earth clips on both sides.
Australia	10A 250V~	**Type I** plug with two flat pins in a V-shape and a flat ground pin.
Japan	15A 250V	**Type B** plug with two flat parallel pins and a round ground pin
Argentina	10A 250V~	**Type I** plug with two flat pins in a V-shape and a flat ground pin.

Table 8

- The AC power supply must be installed by a qualified electrician who meets the requirements of local regulations. Hardware, wire sizes and conduit types must comply with local regulations.
- An easy-to-use circuit breaker must be installed outside the equipment to cut off the power supply of the power line of the projector.

4.1.5. Requirements for Projection Window

- **Window size:** In accordance with the requirements of the specification, it is recommended that the inner opening is 40(W) × 40(H) cm. The window should not be too large, with a flared outer opening to avoid blocking light, affecting the sound insulation effect and disturbing light.
- The window of the digital machine should be as close to the central axis of the screen as possible. Additionally, the two sides and bottom of the window should have sufficient inclination to ensure that the projected picture is not blocked. The projection window must be installed with optical glass to ensure the quality of the projection.
- If the projector cannot be placed in the center window, try to place it in the right window and its down tilt angle must not be > 10⁰.

- **Window glass:** Optical glass with good light transmittance (> 95%), low reflection and small discoloration, which is at an angle of x° to the projection lens axis and the sound insulation issues should be addressed.
- Fire gates should be provided.
- It should be equipped with an observation window on the right side of the machine for easy operation. It is better to add a closeable device to prevent interference light from entering the Cinema.

4.1.6. Requirements for the Screen

The Cinemas are asked to accurately measure the width, height and projection distance of the screen when showing wide-screen format films and covered format films. Mention the Screen Gain and fill in the data in the 'Cinema Data Questionnaire'. Please contact Espedeo Holdings Ltd. for more details.

4.1.7. Strong / Weak Power Cabling (Power cord, signal cable, network cable, TMS, SMS automation system cabling)

The strong/weak current wiring should be arranged separately and the wiring of signal lines of TMS and SMS should be classified so as not to interfere with each other and cause malfunctioning of the system.

⚠ **CAUTION:**
Screen Width, Screen Height, Projection Distance (from the screen to projector lens imaging plane): If the window deviates from the center line by a large distance (> 1m) or the downward inclination of the projector is > 10⁰, special instructions are required in the remarks of the 'Confirmation Form for Installation Requirements of Digital Projector'. Please contact Espedeo Holdings Ltd. for more details.

4.2. Tools required for Installation

Before you start the installation; you must fully understand all the requirements and characteristics of the installation site (as specified in **Section 4.1**) and you must have the following tools:

Sr.No.	Name	Specification/Model	Quantity
①	**Metric hexagon socket set**	Stanley Metric	1 SET
②	**Philips Screwdriver**	30cm Magnetic screwdriver (#2)	1 PCS.
③	**Flat-head Screwdriver**	30cm Magnetic screwdriver	1 PCS.
④	**Flat-head Screwdriver**	M3 Magnetic screwdriver	2 PCS.
⑤	**Diagonal Cutting Pliers**	6" diagonal cutting pliers	1 PCS.
⑥	**Long nose Pliers**	6" long nose pliers	1 PCS.
⑦	**Outer hexagon socket**	8mm	1 PCS.
⑧	**Adjustable Wrench**	8" adjustable wrench	1 PCS.
⑨	**Lens Cloth**		1 PCS.

Table 9

4.3. Lens Installation

- Unscrew the four captive screws on the corners behind the silicon plugs (Philips screwdriver is required).
- Unplug the cable plug of the infrared remote-control board and remove the front cover.
- Remove the projection lens from its lens packaging material and remove the lens covers on both sides. Please take care as to not touch the optical lens.
- Ensure the projection lens is lined up with the axis middle of the lens bracket.
- As shown in **Figure 10**, align the top right flange of the lens with the top notch on the lens bracket. Send the projection lens into the bracket slowly. Overlap the flange surface and the bracket front surface tightly, turn the projection lens clockwise, you will hear a click sound after about 60° rotation and the positioning pin on the left side of the bracket will come out of the positioning holes on the flange of the projection lens (refer to Step ④ in **Figure 10**), which indicates the projection lens is installed. When the installation is finished, there should be no gap between the flange surface of the lens and the bracket front surface.
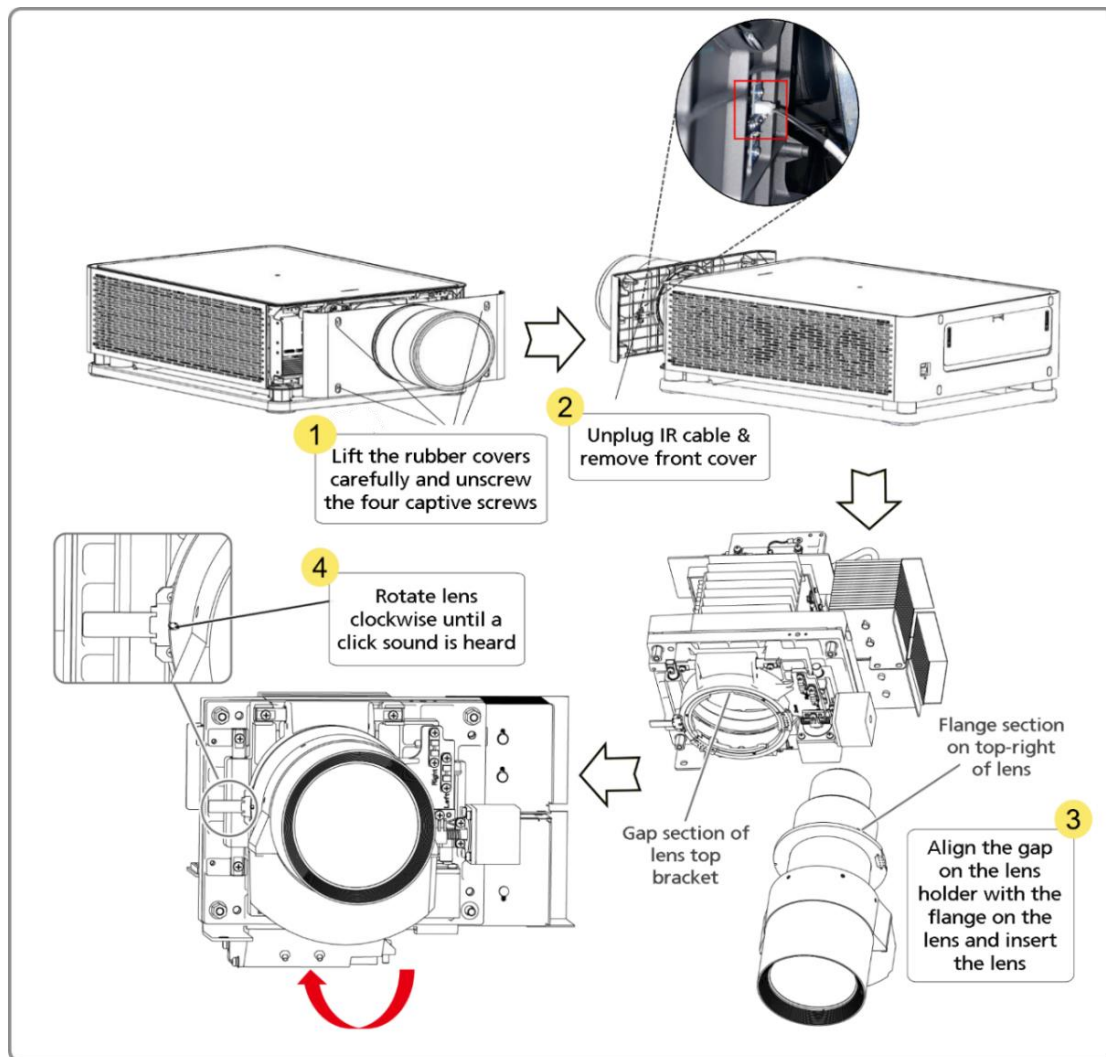- Test to see if the projection lens is properly installed by trying to rotate it.

Figure 10**: Lens Installation**

⚠ **NOTE:**
- When installing and removing the lens, the projector must be powered OFF. It is strictly prohibited to install, remove and replace lens when the projector is in 'Power ON' state.
- Do not bump the lens against the internal parts of the lens rack unexpectedly and/or strongly.
- When tightening the lens clockwise, make sure to see the positioning column (refer to Step ④ in **Figure 10**), on the left side of the lens rack eject from the hole on the left side of the lens flange. Otherwise, it may slip from the lens rack during use.
- Never transport the projector when the lens is installed in the lens rack. The lens must be removed before transporting the projector. If the lens is not removed, the lens rack and other related components can get damaged.

4.4. Instructions for Forward Installation

- The Espedeo Supra-5000 projector is placed at an appropriate projection distance and vertical position. It is best to place the projector in the center of the Cinema screen. If the laser digital movie projector is slightly off-center, the keystone effect on the side will slightly increase. Locate the power supply so that its power cord is properly connected to the rear panel of the projector.
- To fix the projector position; the fixed frame designed for the laser digital movie projector can be used. Ideally, the projector lens should be centered and parallel to the theater screen. This direction ensures the best lens effect with a minimum offset.

⚠ **NOTE:**
To ensure optimum optical performance, tilt the projector if necessary.

4.5. Instructions for Ceiling Mounting

The Espedeo Supra-5000 projector can be mounted to a concrete ceiling or truss using the **Espedeo VM-1140** VESA ceiling mount kit OR an alternative third-party ceiling mount. Please refer to **Section 11** for more information related to the Ceiling Mounts including the parts list, assembly instructions and installation procedure.

4.6. Espedeo PM-2000B 3D System Installation

The **Espedeo PM-2000B** is a standalone 3D polarized system exclusively developed for the Espedeo Supra-5000 projector. The PM-2000B is designed for easy installation and operation by detecting 2D and 3D signals, which enables the system to shift corresponding working positions automatically.

⚠ **NOTE:**
The PM-2000B is the **only** 3D System that is compatible with the Supra-5000 projector.
Please refer to the 'Espedeo PM-2000B Installation Manual' for more information related to the 3D System including the parts list, assembly instructions and installation procedure.

4.7. Network Setup (for Cinema users)

The Espedeo Supra-5000 projector can be connected to the Media/Content and Management network of the Cinema, as depicted in **Figure 11** below.
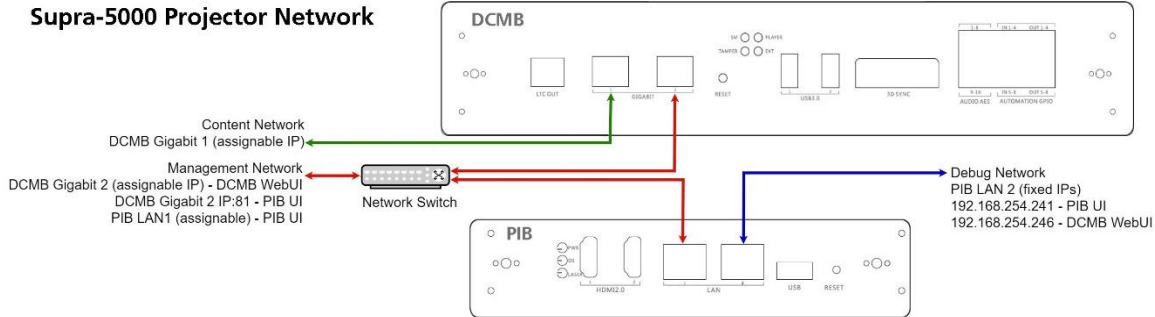

Figure 11: Network Setup for Supra-5000

- The **LAN 1** port of the PIB and the **GIGABIT Port 2** of the DCMB should be connected to the Cinema Management network, via a network switch.
  a. The IP Address of the DCMB **GIGABIT Port 2** (**IMB Ethernet 2**) can be configured from the **Configuration → System** menu of the DCMB Web UI (refer to **Section 7.1** for more details).
  b. The IP Address of the PIB **LAN 1** port can be configured from the **Installation → Projector IP Address Settings** menu of the Supra Command Center web interface (refer to **Section 6.8** for more details).

- The **GIGABIT Port 1** of the DCMB should be connected to the Cinema Media/Content network.
  a. The IP Address of the DCMB **GIGABIT Port 1** (**IMB Ethernet 1**) can be configured from the **Configuration → System** menu of the DCMB Web UI (refer to **Section 7.1** for more details).

- The **LAN 2** port of the PIB should not be connected to any Cinema network (refer to NOTE mentioned below for more details).

Using this configuration, the **Supra Command Center web interface** and the **DCMB Web UI** can be accessed via a laptop which is connected to the Cinema's Management network. Make sure the laptop network interface IP, DCMB **IMB Ethernet 2** IP and the PIB **LAN 1** IP are configured as per the Cinema's Management network and are on the same subnet.

⚠ **NOTE:**
The Supra Command Center web interface and the DCMB Web UI can also be accessed using a laptop that is connected to the **LAN 2** port of the PIB. The IP address of the PIB **LAN 2** port is fixed to 192.168.254.241 (Supra Command Center web interface) and 192.168.254.246 (DCMB Web UI). Make sure that the PIB **LAN 2** IP and the laptop network interface IP are on the same subnet.

It is preferred to use this method of accessing the projector's web interfaces during initial setup or maintenance/debugging purposes, and not for routine operations.

5. Powering Up the Espedeo Supra-5000

5.1. Starting the Projector

Before starting the Espedeo Supra-5000 projector, it is essential that you refer to the safety instructions mentioned under **Section 2**. After connecting the female connector of the power cord (included in the package) to the power socket of the projector and the male plug to a recommended AC power outlet of the correct rating (refer to **Section 4.1.4** for more details); switch ON the power source to the projector. After approximately five minutes, the projector will be powered ON. The status indicator on the top panel of the projector should show steady Green after the boot-up is complete.

In the scenario where the mounting and placement of the Projector allows you to access the back panel, you may also check the status of the LED indicators on the DCMB. Wait for the working status of the **SM, TAMPER** and **EXT** LED indicators on the DCMB to show steady Green (refer to **Section 3.3.5.1** for more information regarding the DCMB LED indicators).

5.2. Controlling and Operating the Espedeo Supra-5000

The Espedeo Supra-5000 projector is controlled and operated using the **Supra Command Center web interface** (for all the projector-related functions) and the **DCMB Web UI** (for all the playback-related functions of the DCMB). Both these interfaces can be wirelessly accessed from a web browser* on an Android™ tablet OR from a web browser* on a laptop connected via a wired or wireless connection to the projector.

Accessing the **IMB Ethernet 2** IP Address of the **DCMB** via a web browser* will provide you access to the DCMB Web UI and accessing the URL: http://IMBETH2IP:81 where 'IMBETH2IP' represents the **IMB Ethernet 2** IP address of the DCMB will provide you access to the Supra Command Center web interface.

For example: The default IP Address of the DCMB is 192.168.1.12. In this case; the URL: http://192.168.1.12 will provide you access to the DCMB Web UI, whereas the URL: http://192.168.1.12:81 will provide you access to the Supra Command Center web interface.

We recommend that you refer to the Espedeo Supra-5000 User Manual for detailed information on how to access and operate the projector's web interfaces.
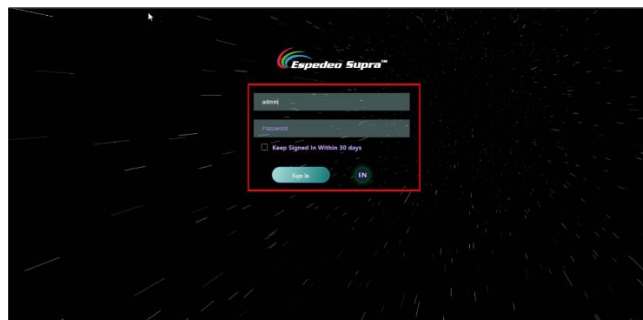

Figure 12: Supra Command Center web interface login page

* Please note that Google Chrome™ is supported at the time of writing this manual

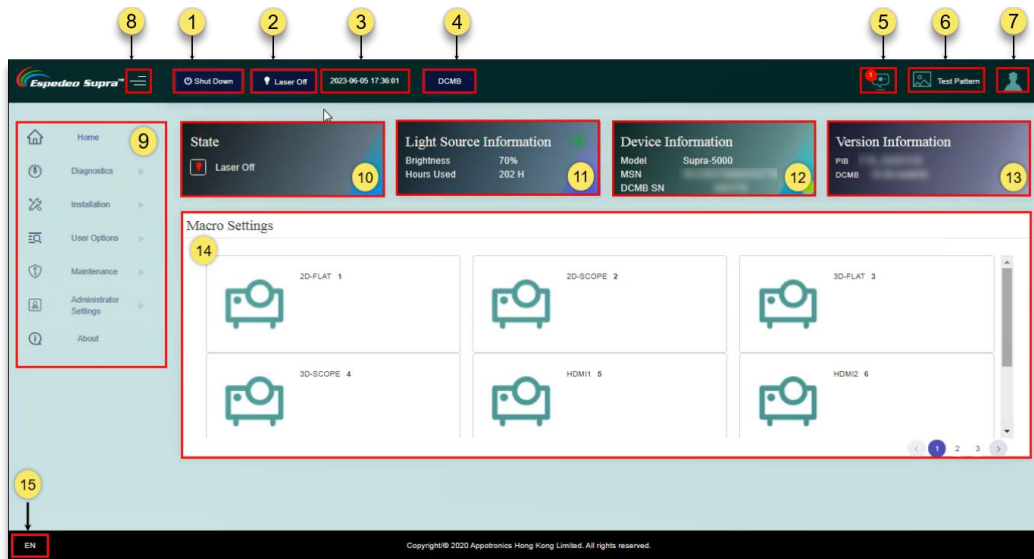## 5.3. Overview of Supra Command Center Home Screen

Figure 13: Supra Command Center Web Interface Home screen

SN	Name	Function Description
①	Power switch	Indicates the operational status of the projector. You can toggle the status between the following states: ▪ **Power On**: The projector is in running status. When the projector is in 'Power ON' state, the Laser light source can be turned ON or OFF. ▪ **Shut Down:** The Laser light source of the projector must be turned OFF prior to shut down. Once the 'Shut Down' button is clicked, the projector fans are put in spin-down mode and the projector enters the 'Standby' state. You can wake up the projector through the network.
②	Light Source switch	Indicates the operational status of the Laser light source of the projector. You can toggle the status between 'Laser On' and 'Laser Off'.
③	Date and Time	Indicates the system date-time that has been set on the projector.
④	DCMB	Clicking on this button will open the DCMB Web UI in a separate tab of the web browser. **NOTE:** The **DCMB** button will be shown on the **Home** screen only when you login to the Supra Command Center web interface using the URL: http://192.168.254.241 via the **LAN 2** network port of the PIB.
⑤	Error Information	Show the warning and error information of the projector.
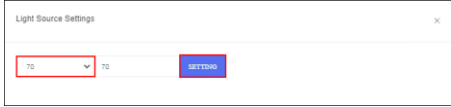
⑥	Test Pattern	A shortcut icon for projecting a test pattern. The desired test pattern can be selected. Refer to **Section 5.3.2** for more details.
⑦	User permissions	Users are classified into 'Ordinary User' or 'Professional User'. Menu UI options vary based on user permissions.
⑧	☰	Show/Hide the Navigation functions on the Home screen.
⑨	Navigation	List of various functions available under the Supra Command Center. The operation functions shown in this list vary according to user permissions.
⑩	State	Displays the current status of the projector, which includes *'Power On'*, *'Standby', 'Laser On' and 'Laser-Off'.*
⑪	Light Source Information	Displays the brightness and use time of the Laser light source. If the equipment is in rental mode, the remaining time of the light source is also displayed. Click on the ☼ icon to access the **Light Source Settings** to adjust the brightness of the current image on the screen. Select the desired brightness value from the drop-down and click on the **Setting** button. However, recalling any macro with a different brightness level will override this setting. Light Source Settings ✕ [70 ▾] [70] [SETTING]
⑫	Device Information	Displays the model of the projector, MSN and DCMB Serial No.
⑬	Version Information	Displays the version information of the PIB and DCMB software. **NOTE**: The software versions being used at the time of writing this Manual is 'T28' for the **PIB** and '18.1-build18' for the **DCMB**.
⑭	Macro Settings	Displays the six default macros along with any custom 2D/3D macros created by the user.
⑮	Language Select	Indicates the current language in which the DCMB Web UI is displayed. To change the language, click on this button and select the desired language from the list.

Table 10

⚠ **NOTE:**

For more information on the various menu options and corresponding functions of the Supra Command Center web interface, refer to the 'Espedeo Supra-5000 User Manual'.

5.3.1. Switching ON the Laser Light Source

From the Supra Command Center interface, click the **Laser On** button on the top menu bar to switch ON the projector's Laser Light Source. The projector State will change to 'Laser On', as shown in **Figure 14**. If you want to switch OFF the projector's Laser Light Source, click on this button again. The projector State will now change to 'Laser Off'.
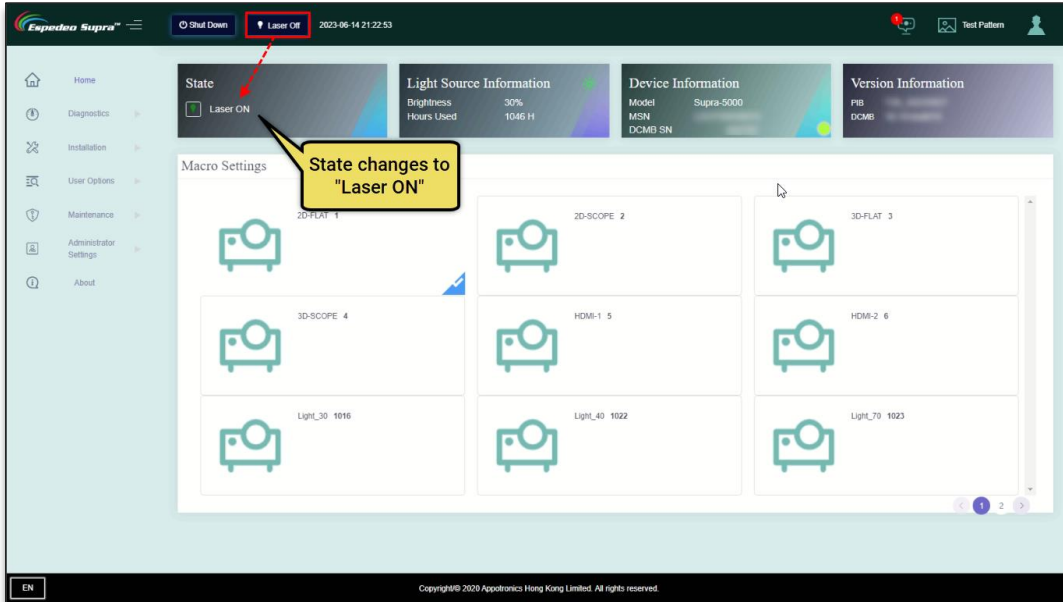

Figure 14: Switching ON the Laser Light Source

⚠ **NOTE:**

You may also project a Test Pattern to make sure that the Laser Light Source has been switched ON successfully (optional). Refer to **Section 5.3.2** for more information on projecting a Test Pattern.

5.3.2. Projecting a Test Pattern

From the Supra Command Center interface, click the **Test Pattern** shortcut button on the top menu bar to access the Test Pattern screen. Here, you can select the default test pattern image for the projector. Click on the **Close Test Pattern** button, to clear the test pattern from the screen so that Digital Cinema Package (DCP) content or input from an HDMI source can be projected.
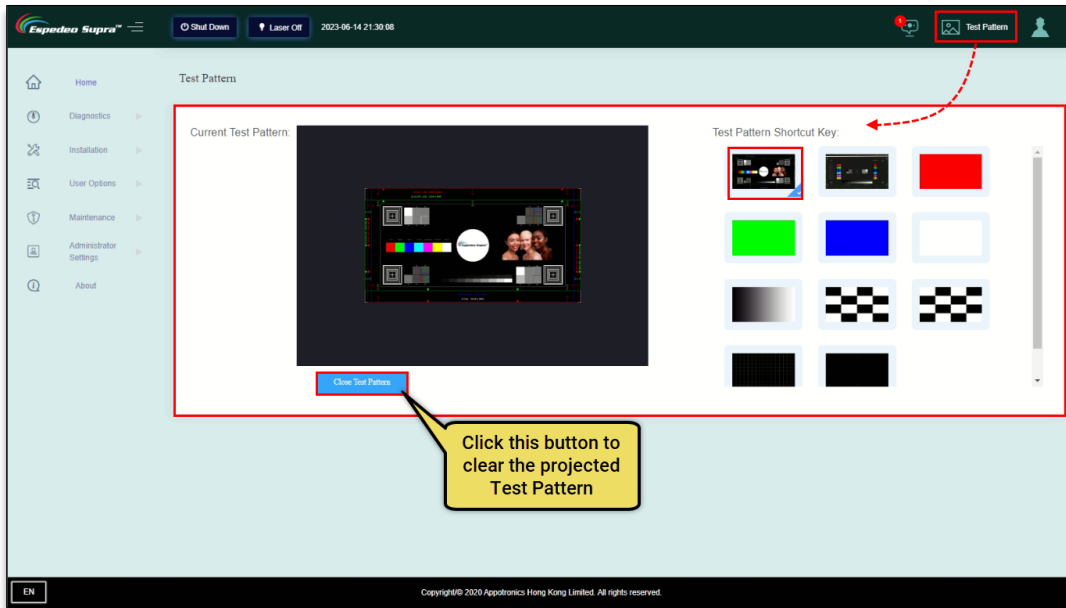
Figure 15: Projecting a Test Pattern

5.3.3. Switching to HDMI Playback

In the case of HDMI playback from an external AV source such as Blu-ray player, Set-Top box, etc., select a HDMI macro ('HDMI1' or 'HDMI2') depending on the port that the HDMI source is connected to on the PIB and initiate playback of the HDMI playlist on the DCMB Web UI. Video from the connected HDMI source will then be projected.

For more details on how to connect an HDMI source to the projector and to initiate playback, please refer to the Espedeo Supra-5000 User Manual.
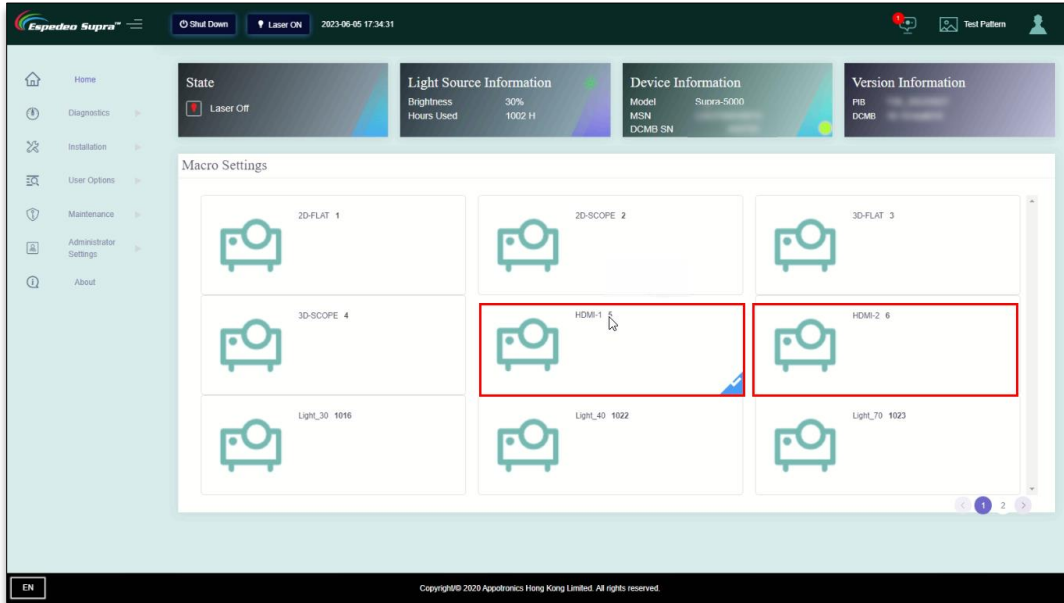
Figure 16: Selecting a Macro for HDMI Playback

6. Projector Settings

The **Installation** screen of the Supra Command Center web interface provides installation-related settings for the projector such as setting the macros, setting Source files, setting Screen files, setting Color files, setting Light Source files, setting Lens files, setting 3D files and setting the IP Address of the projector.

6.1. Installation → Macro Settings

The **Macro Settings** menu allows you to edit the settings for the default macros of the projector i: e '2D-FLAT', '2D-SCOPE', '3D-FLAT', '3D-SCOPE', 'HDMI1' and 'HDMI2'. Additionally, you can add or edit any custom 2D/3D macros as well.
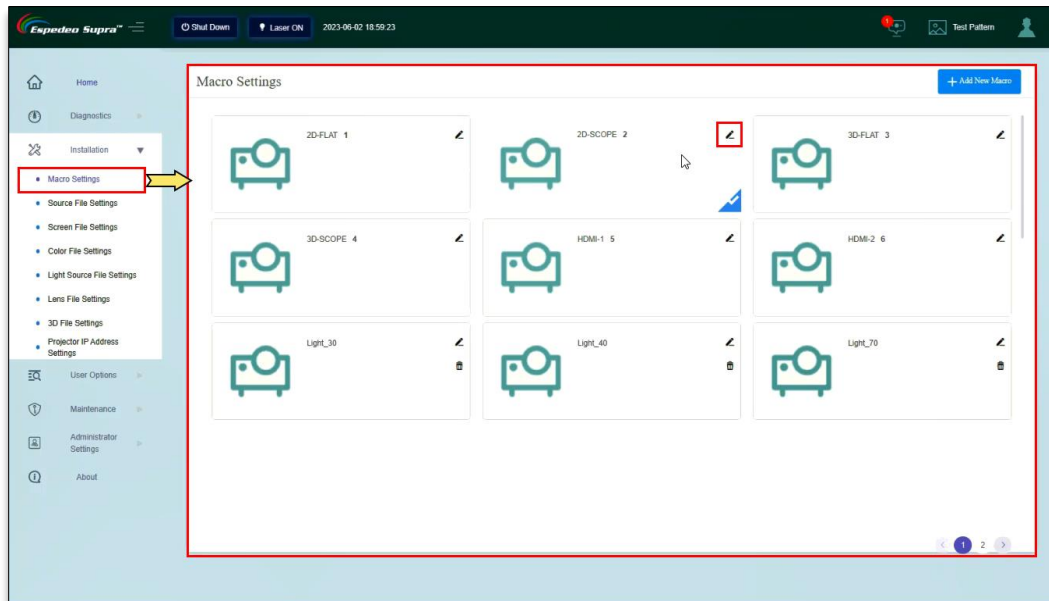
Figure 17: Installation → Macro Settings

6.1.1. Editing the 2D-FLAT Macro

Click on the ✎ icon under the '2D-FLAT' macro. Select the Source File, Screen File, Color File, Light Source File and Lens File. Click **Load File** and import the preset Source File, Screen File, 2D Color File, Light Source File and Lens File in sequence. Click **Save**. The macro will be successfully edited.

⚠ **NOTE:**
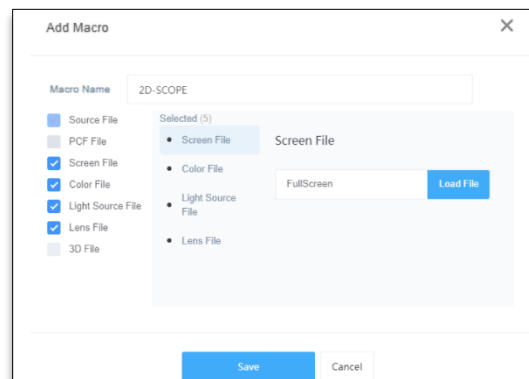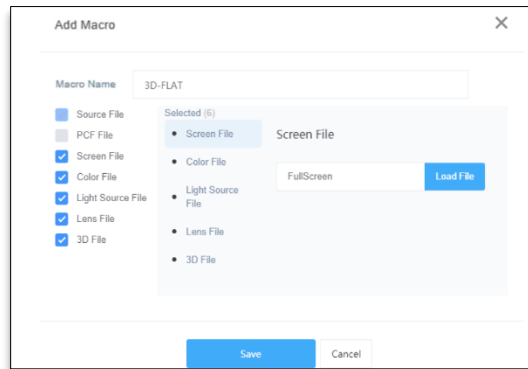> By default, the Source File and PCF File under this macro are imported and the 3D File cannot be selected.
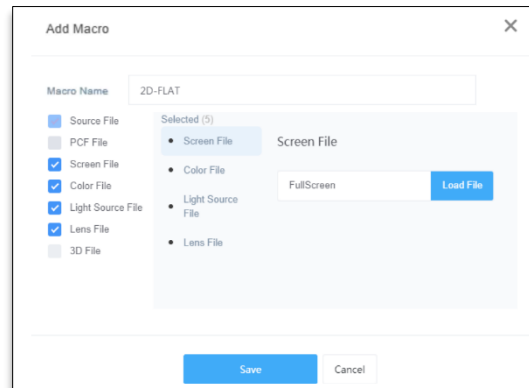
Figure 18: Edit 2D-FLAT Macro

6.1.2. Editing the 2D-SCOPE Macro

Click on the ✎ icon under the '2D-SCOPE' macro. Select the Source File, Screen File, Color File, Light Source File and Lens File. Click **Load File** and import the preset Source File, Screen File, 2D Color File, Light Source File and Lens File in sequence. Click **Save**. The macro will be successfully edited.

⚠ **NOTE:**
> By default, the Source File and PCF File under this macro are imported and the 3D File cannot be selected.


Figure 19: Edit 2D-SCOPE Macro

6.1.3. Editing the 3D-FLAT Macro

Click on the ✎ icon under the '3D-FLAT' macro. Select the Source File, Screen File, Color File, Light Source File, Lens File and 3D File. Click **Load File** and import the preset Source File, Screen File, 3D Color File, Light Source File, Lens File and 3D File in sequence. Click **Save**. The macro will be successfully edited.

⚠ **NOTE:**
   By default, the Source File and PCF File under this macro are imported and the preset 3D File is selected.

Figure 20: Edit 3D-FLAT Macro

6.1.4. Editing the 3D-SCOPE Macro

Click on the ✎ icon under the '3D-SCOPE' macro. Select the Source File, Screen File, Color File, Light Source File, Lens File and 3D File. Click **Load File** and import the preset Source File, Screen File, 3D Color File, Light Source File, Lens File and 3D File in sequence. Click **Save**. The macro will be successfully edited.

⚠ **NOTE:**
   By default, the Source File and PCF File under this macro are imported and the preset 3D File is selected.
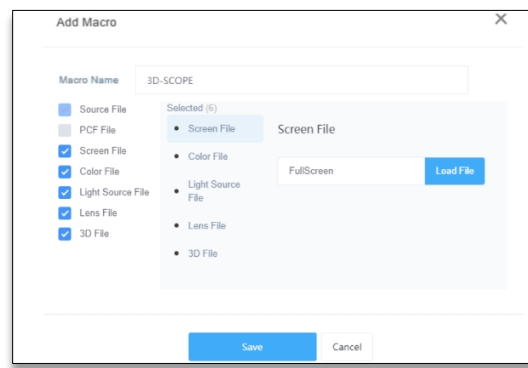
Figure 21**: Edit 3D-SCOPE Macro**

6.1.5. Creating a Custom 2D or 3D Macro

You can also add a custom 2D or 3D macro by clicking on the **Add New Macro** button and importing the relevant source, screen, color, light source and lens files as shown in **Figure 22**.
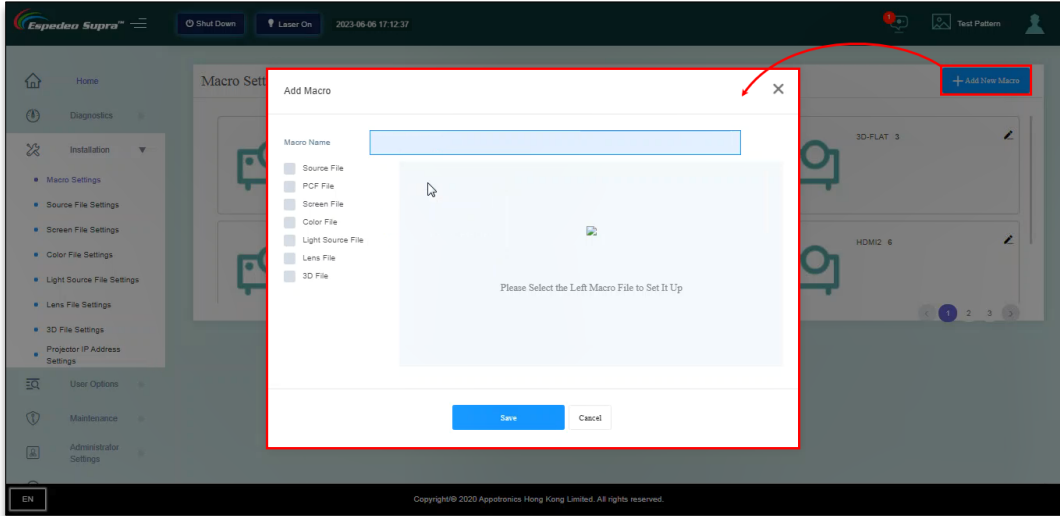

Figure 22: Creating Custom 2D/3D Macros

I. The procedure for creating a 2D macro is consistent with the procedure for editing the '2D-FLAT' or '2D-SCOPE' macro. Note that the 'DCMB' shall be selected as the Source File and no 3D File is selected.
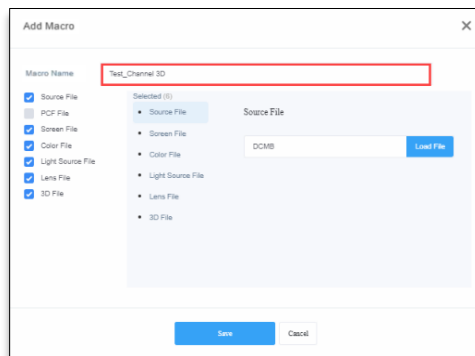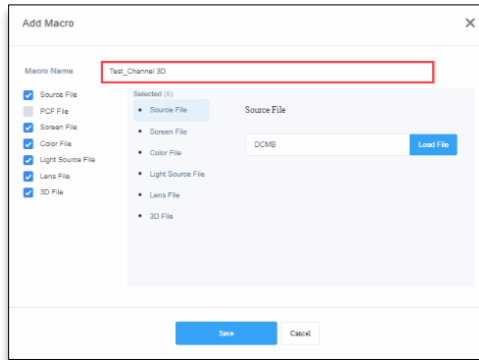

Figure 23: Create Custom 3D Macro

II. The procedure for creating a 3D macro is consistent with the procedure for editing the '3D-FLAT' or '3D-SCOPE' macro. Note that the 'DCMB' shall be selected as the Source File.

Figure 24: Create Custom 2D Macro

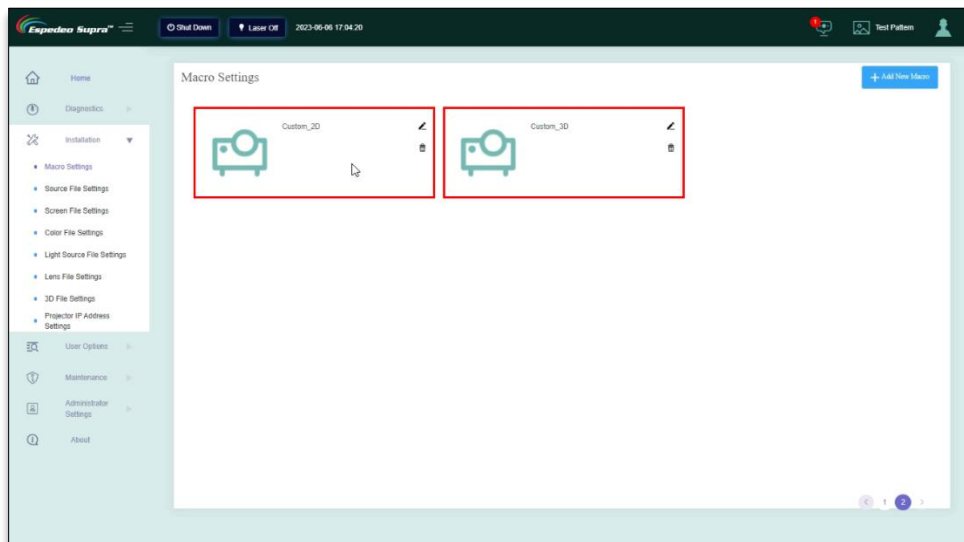**III.** You can now view the created macros under **Macro Settings** as shown in **Figure 25**.

Figure 25: List Custom 2D/3D Macros

6.2. Installation → Source File Settings

The **Source File Settings** menu lists the type of video sources supported by the projector. The projector supports packing formats of SMTPE DCP and Interop DCP as well as supports the input of HDMI signal.
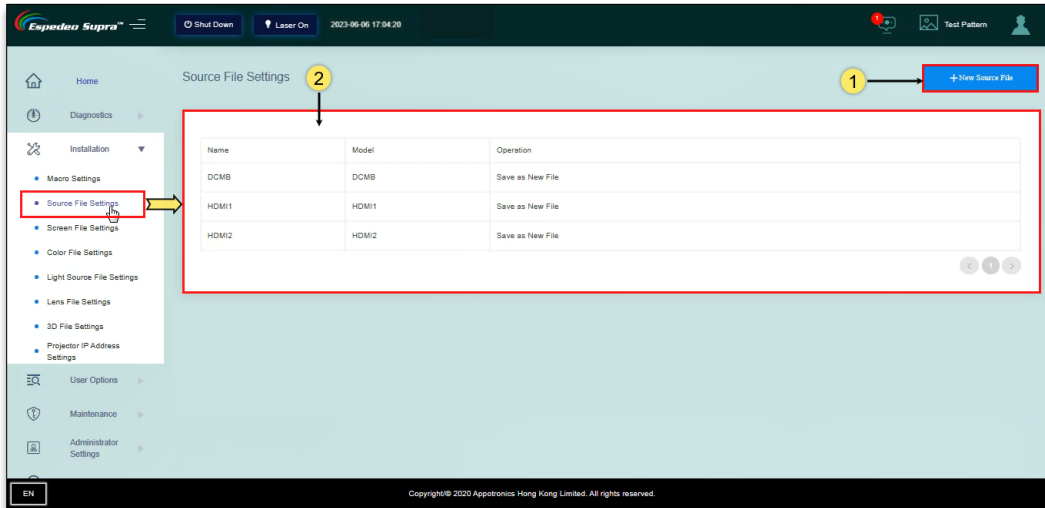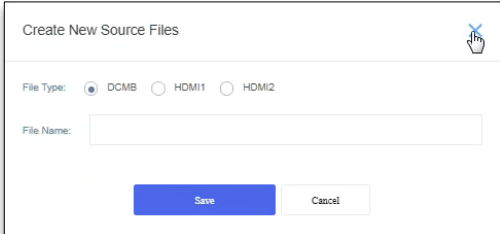

Figure 26: Installation → Source File Settings

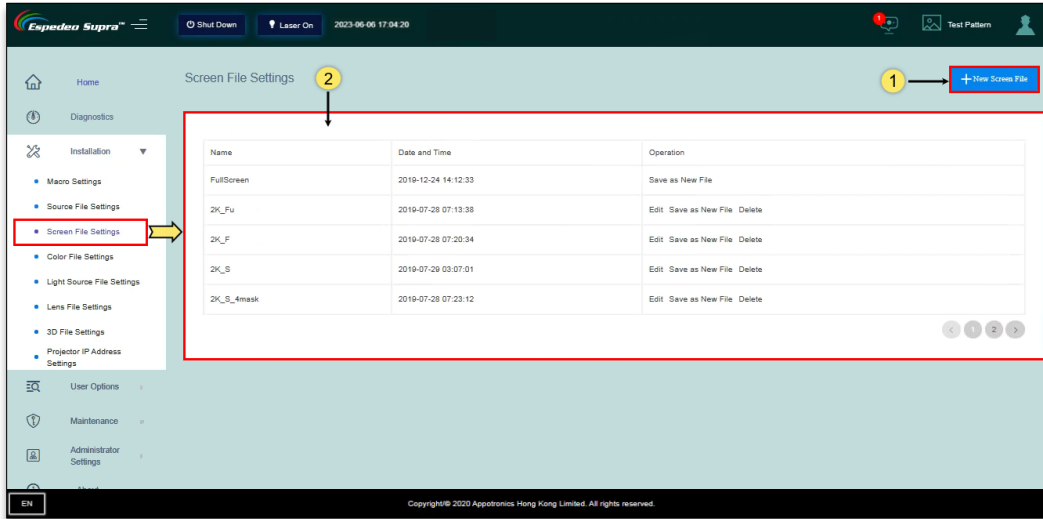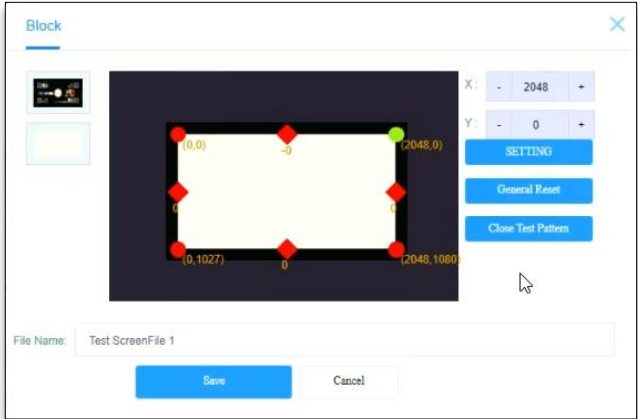| SN	Name	Function Description
①	New Source File	Click on this button to create a source file. This button is enabled when you set the Source file. You can add the desired source file to a particular macro, under the **Macro Settings** menu.
②	Source file list	List the source files, including 'DCMB', 'HDMI1' and 'HDMI2'. The DCMB source file is used when the DCMB plays DCP content from the local storage of the projector. As an alternative to DCP, you can use 'HDMI1' or 'HDMI2' Source file for HDMI content input. **NOTE**: The Supra-5000 projector supports only 1080p@60Hz HDMI source

Table 11

6.3. Installation → Screen File Settings

Figure 27: Installation → Screen File Settings

SN	Name	Function Description
①	New Screen File	Click on this button to create new Screen files. Click on a particular adjustment point (it will be highlighted in Green) and mentioned the desired 'X and Y' coordinates or the 'Curve' value, whichever is applicable. You can also choose from the listed Test Patterns on the left, to view the projected result. Click on the **SETTING** button to apply and view the changes on the projected Test Pattern. You can undo all the changes made to adjustment points, by clicking the **General Reset** button. Click the **Close Test Pattern** button once the changes are complete. Provide a file name and click on the **Save** button to create the Screen file.

		You can add the desired screen file to a particular macro, under the **Macro Settings** menu.
②	Screen File list	Lists all the Screen files, including 'FullScreen' (No crop). You can also edit or delete the listed Screen files (except 'FullScreen') or save any of them as a new Screen file.

Table 12

6.4. Installation → Lens File Settings

Different Lens files represent different sizes of projected images. You can set different Lens files using the Up, Down, Left, Right, ZOOM +/- and FOCUS +/- buttons.

NOTE: Before proceeding with the Lens file creation, make sure the appropriate lens model is selected and lens leading/homing is performed from the **Administrator Settings → Select lens** menu (refer to **Section 6.10** for more details).
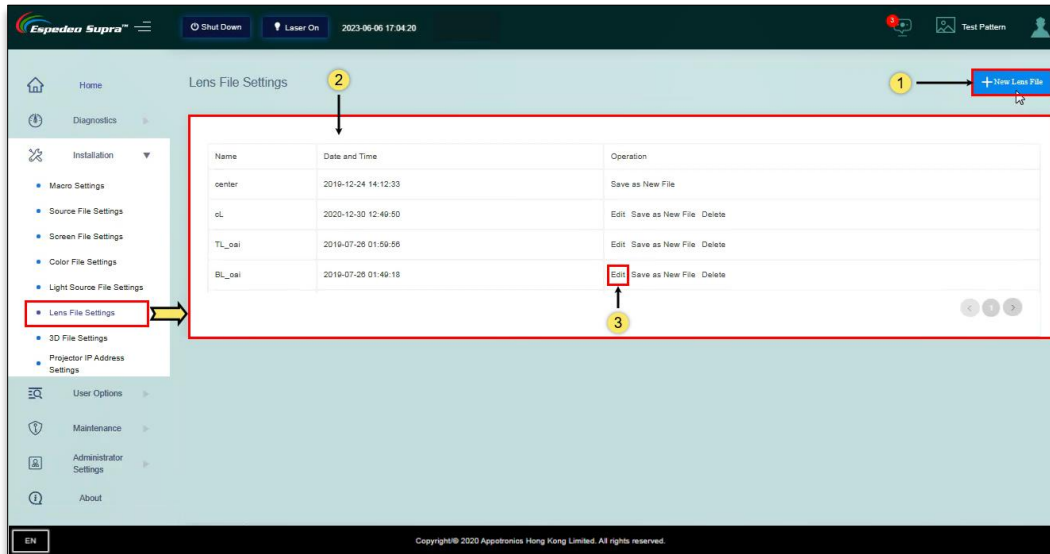

Figure 28: Installation → Lens File Settings

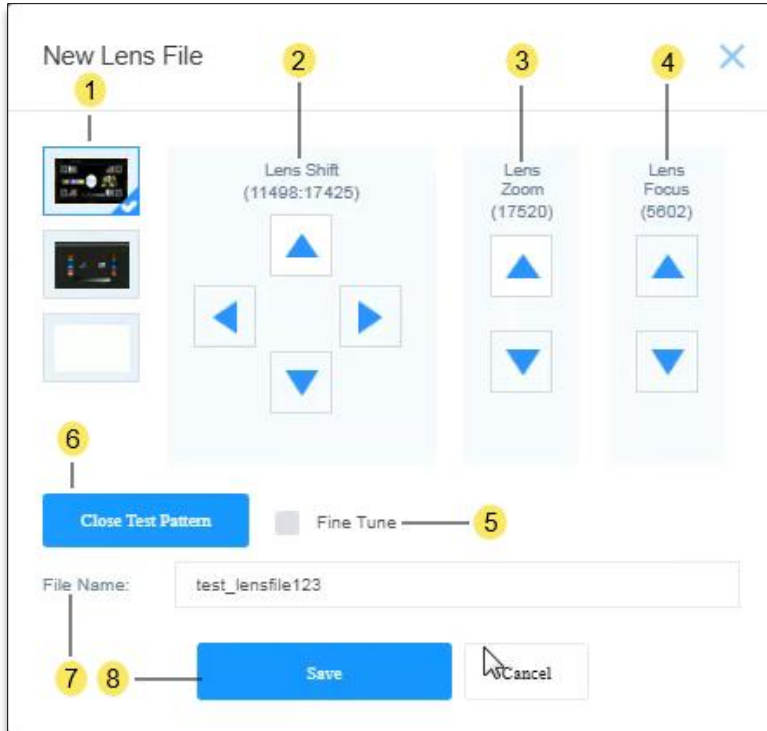| SN	Name	Function Description
①	New Lens File	Click on this button to create a new Lens file, as shown in **Figure 29**. This button is enabled when you set the Lens file.
②	Lens file list	Lists the Lens files of the projector. You can create suitable Lens files according to actual requirements.
③	Edit Lens file	You can use the edit option to adjust the offset of the position after the a new lens is created.

Table 13

Figure 29: New Lens File Settings

SN	Name	Function Description
①	Test Pattern	Select any of the listed Test Patterns to view the projected result of the Lens file settings.
②	Lens Shift	These buttons can be used to shift the lens Up, Down, Left and Right.
③	Lens Zoom	These buttons can be used to zoom in/out the lens.
④	Lens Focus	These buttons can be used to adjust the focus (sharpness) of the lens.
⑤	Fine Tune	Select this option to fine-tune the lens shift, zoom and focus.
⑥	Close Test Pattern	Click this button once changes to the Lens file are complete.
⑦	File Name	Enter a name for the new Lens file.
⑧	Save/Cancel	Click Save to save the changes to the selected Lens file and enter the 'Auxiliary Adjustment' screen (refer to **Section 6.4.1**). Click Cancel to discard all changes.

Table 14

6.4.1. Auxiliary Adjustment for Lens Files

When you click on the Save button after creating or editing any Lens File; in case there are any deviations between the targeted and actual position of the projected image after saving the Lens File, you can perform certain additional adjustments by clicking the Auxiliary adjustment button (refer to **Figure 30**).

Alternatively, you can click on the Cancel button if the actual position of the projected image matches the targeted position after saving the Lens File.
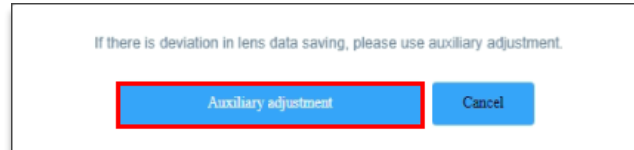
Figure 30: Auxiliary Adjustment (1)

The Auxiliary adjustment option allows you to shift the position of the lens in the Up and Right directions (refer to **Figure 31**), to correct the deviations in the projected image. Once the desired position is achieved, click on the Save button to save the changes to the Lens File.
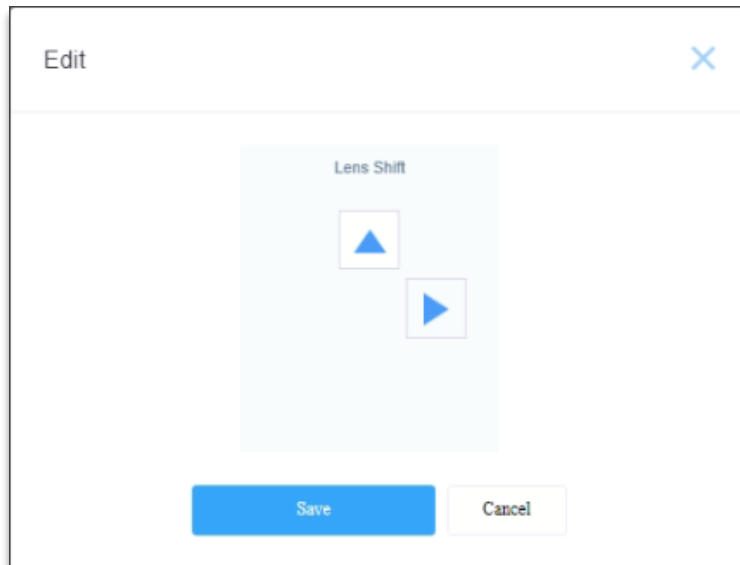

Figure 31: Auxiliary Adjustment (2)

NOTE: In case the Supra-5000 Projector is ceiling mounted, you need to change the Projector Orientation to 'Orthographic' under the **Administrator Settings → Advanced Settings** screen, perform the Auxiliary adjustment for the concerned Lens File. Once done, switch the Projector Orientation back to 'Mounted' for actual projection.
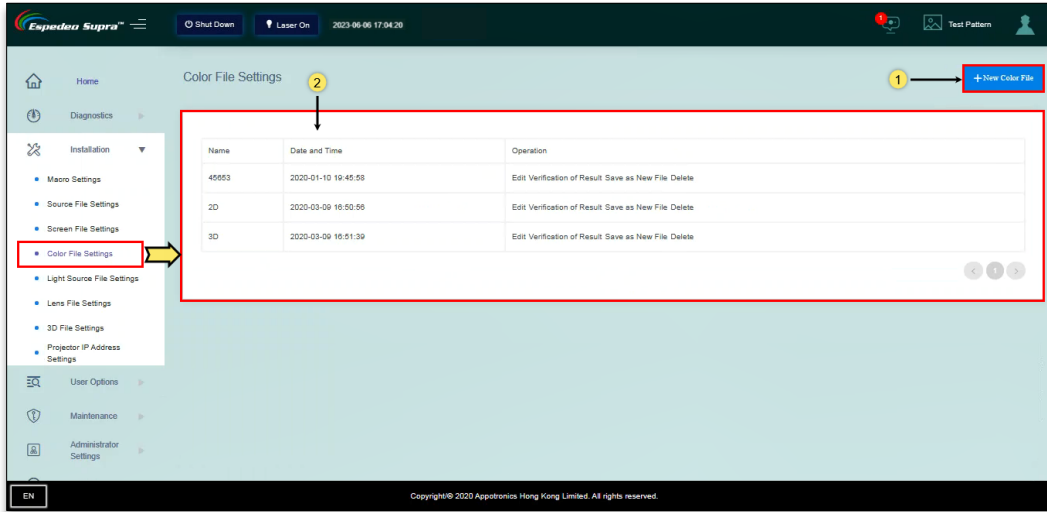
6.5. Installation → Color File Settings

Figure 32: Installation → Color File Settings

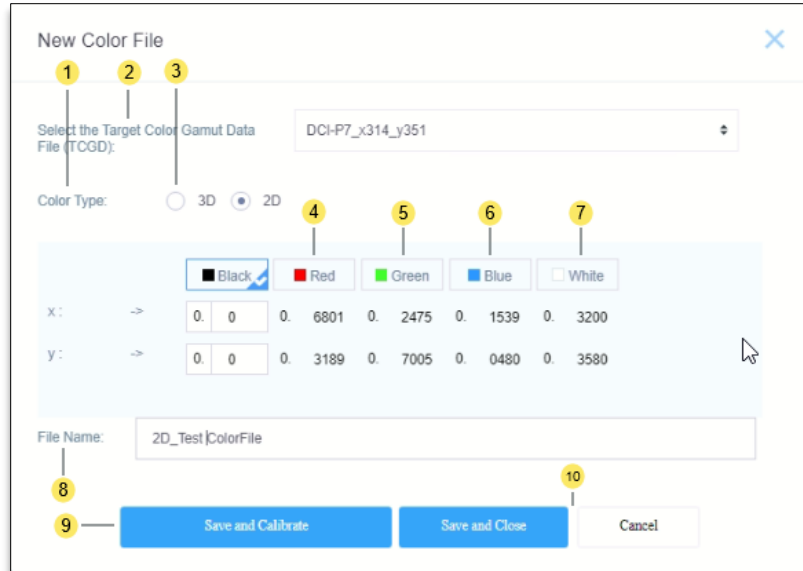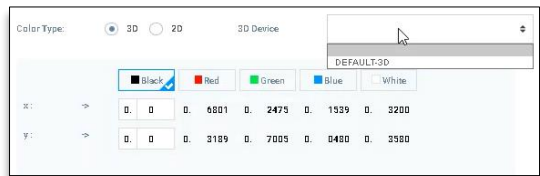| SN	Name	Function Description
①	New Color File	Click on this button to create new 2D and 3D Color files (refer to **Figure 33**). Refer to **Table 16** for more details regarding the New Color file screen.
②	Color file list	Newly created 2D and 3D Color files are displayed under the Color file list. You can edit or verify the corrected Color file, save it as a new Color file or delete a particular Color file. You can add the desired Color file to a particular macro, under the **Macro Settings** menu.

Table 15

Figure 33: Create a New Color File

SN	Name	Function Description
①	Select the Target Color Gamut Data file (TCGD)	You can select the TCGD file based on the source: ▪ For the DCP, select the DCI color file 'DCI-P7_x314_y351'. ▪ For the HDMI, select the rec.709 color file 'Rec.709_x3127_y329'.
②	Color Type	For 2D_DCP color calibration, select '2D'. For 3D_DCP color calibration, select '3D'.
③	3D Device	When the color type is set to '3D', you need to select the corresponding 3D device. The default 3D device used by the projector is 'DEFAULT-3D'. To use a new 3D device, choose **3D File Settings → New 3D File** and configure the corresponding control parameters of the new 3D device.
④	Red	After you click 'Red', the screen displays a Red field. Use a spot spectroradiometer to measure the color coordinates of the current screen center and enter values of X and Y based on the color coordinates.
⑤	Green	After you click 'Green', the screen displays a Green field. Use a spot spectroradiometer to measure the color coordinates of the current screen center and enter values of X and Y based on the color coordinates.

|		
⑥	Blue	After you click 'Blue', the screen displays a Blue field. Use a spot spectroradiometer to measure the color coordinates of the current screen center and enter values of X and Y based on the color coordinates.
⑦	White	After you click 'White', the screen displays a White field. Use a spot spectroradiometer to measure the color coordinates of the current screen center and enter values of X and Y based on the color coordinates.
⑧	File Name	Enter a name for the new color file. It is recommended to name the 2D and 3D Color files separately, for example, "2D_DCP" or "3D_DCP".
⑨	Save and Calibrate	Save and calibrates the current Color file, as shown in **Figure 34.** Checks whether the color is within the standard range after calibration. If yes, it is qualified. Otherwise, you need to find the reason. Click Completed to conclude the calibration process.
⑩	Save and Close/Cancel	Click Save and Close to save all changes to the selected Color file. Click Cancel to discard all changes.

Table 16
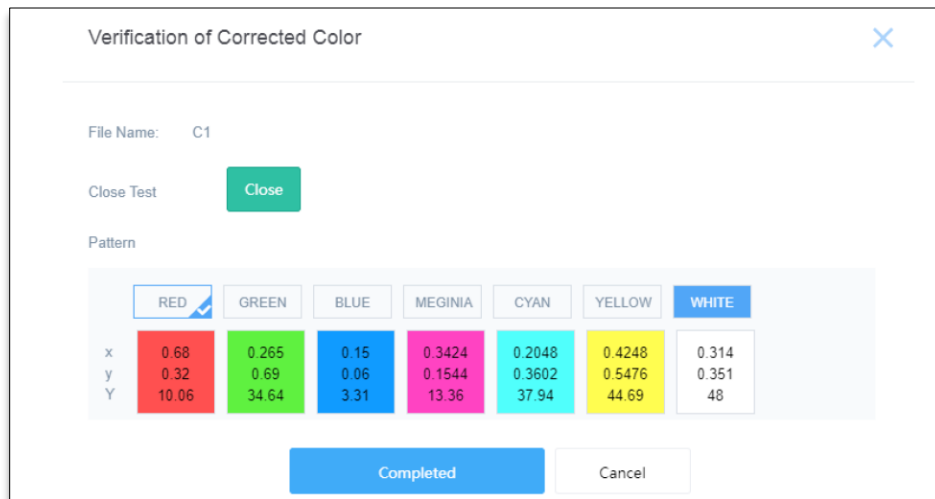
Figure 34: Calibrate and Verify new Color File

⚠ **NOTE:**

- Before proceeding with color calibration, it is recommended to perform the lens back focus adjustment (refer to **Section 10.1**) and DMD convergence (refer to **Section 10.2**).
- For 2D color calibration, set the color type to '2D'.
- For 3D color calibration, set the color type to '3D'. By default, the 'DEFAULT-3D' device is used for 3D color calibration.
- While performing a 3D color calibration, the 3D filter unit should be placed in front of the projector lens and measurements should be taken through a pair of 3D glasses.
- The corrected color files should be differentiated between 2D and 3D and used for the corresponding 2D or 3D macros.

6.6. Installation → Light Source File Settings

Light Source files are configured based on the brightness of light output by the projector. Therefore, you can set different Light Source files to achieve different luminous fluxes of the projector.

The Light Source file defines a percentage based on the maximum luminous flux output by the projector, configured by setting differentiated proportions downwards.
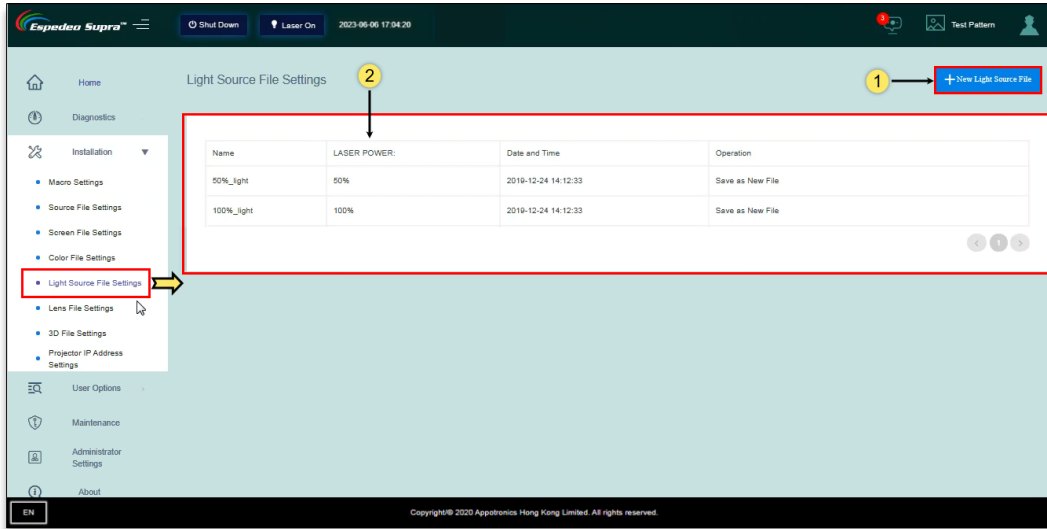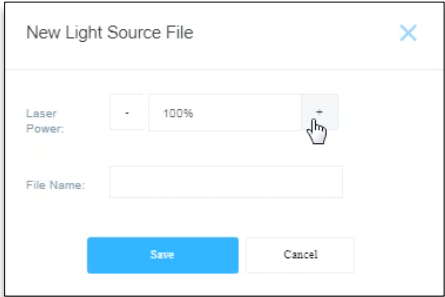

Figure 35: Installation → Light Source File Settings

SN	Name	Function Description
①	New Light Source File	Click on this button to create a new Light Source file, as shown below. This button is enabled when you set the Light Source file. **NOTE**: The Laser Power should not be set below <u>30%</u> in any Light Source file.
②	Light Source file list	Lists the Light Source files of the projector. By default, there are '50%' and '100%' Light Source files, indicating that the maximum luminous flux output by the projector is 50% and 100% respectively. You can create suitable Light Source files according to the actual brightness

Table 17

6.7. Installation → 3D File Settings

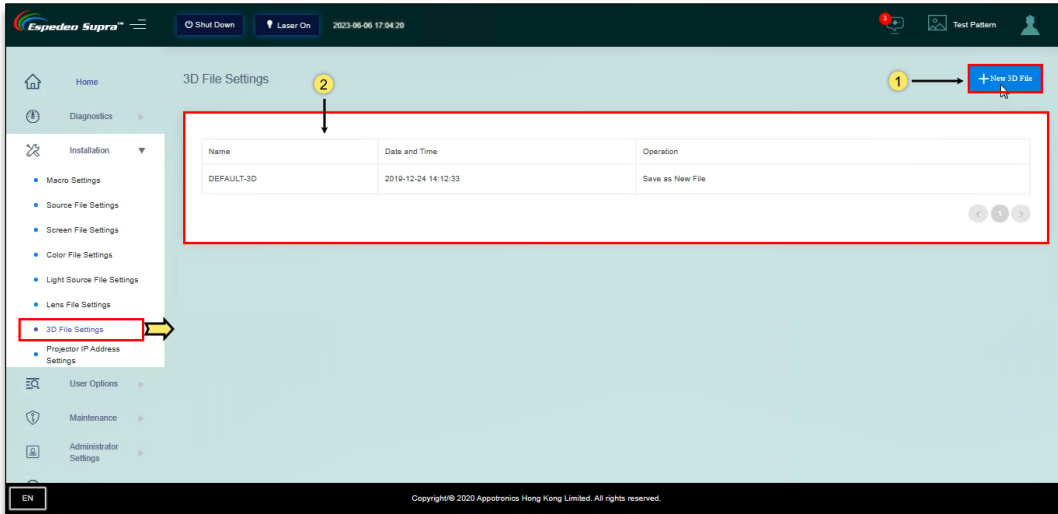You can create different 3D files in the **3D File Settings** menu.
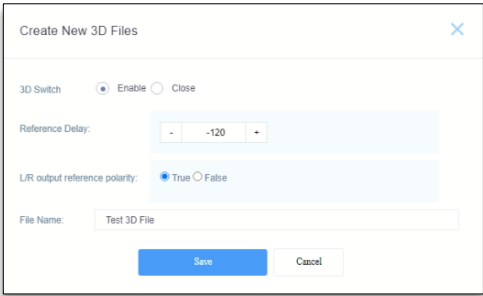

Figure 36: Installation → 3D File Settings

SN	Name	Function Description
①	New 3D File	Creates a new 3D file. You can configure 3D files based on the various parameters in the 'Create New 3D Files' window.
②	3D File List	Lists all the 3D files on the projector. The default 3D file of the projector is 'DEFAULT-3D'.

Table 18

6.7.1. 3D File Settings for PM-2000B 3D System

To configure the **Espedeo PM-2000B 3D System** with the Supra-5000 projector, go to the **3D File Settings** menu and click on **New 3D File**. Set the values mentioned below for the corresponding parameters and save the 3D file by clicking on **Save**:

- Provide a File Name: for the new 3D File.
- Set 3D Switch to "Enable".
- Set the Reference Delay: to "-120µs".
- Set the L/R output reference polarity: to "True".

Once created, you can import this 3D File to a default or custom 3D macro by editing the corresponding macro from the **Macro Settings** menu. Refer to **Section 6.1** for more details.

Furthermore, you also need to set the values for 3D Sync Polarity and Output Delay under the **3D Settings** section (**Configuration → Image → Image Source**) of the DCMB Web UI. Refer to **Section 7.8** for more details.

6.8. Installation → Projector IP Address Settings

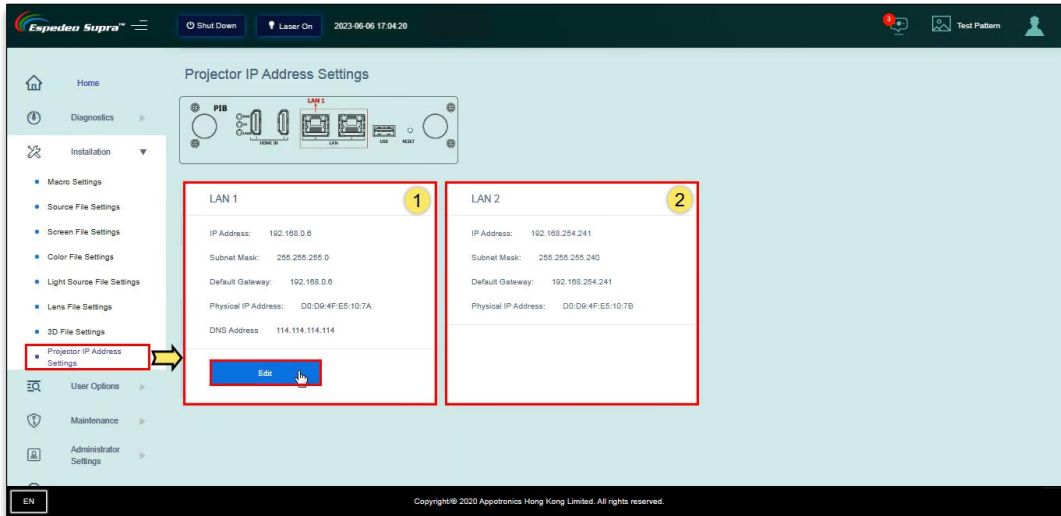You can set the IP address of the PIB module (**LAN 1**) as required.

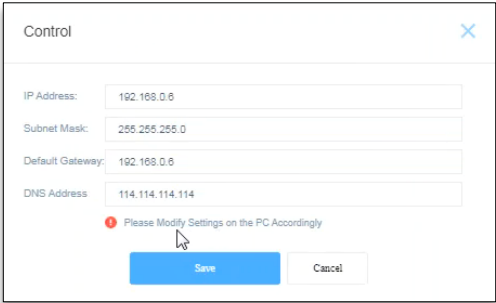**Figure 37: Installation → Projector IP Address Settings**

SN	Name	Function Description
①	LAN 1 port	You can set different IP Addresses for **LAN 1** port according to actual requirements. Click on the **Edit** button to edit the *IP address, Subnet Mask, Default Gateway and DNS Address* values for **LAN 1** port. The IP Address must range from 240 to 255 and cannot be set to 241 and 246. Additionally, the *Subnet Mask* value for the PC/Laptop network interface should be set to 255.255.255.240. Once set, you must set the same network segment on the PC/Laptop to access the Supra Command Center. **NOTE**: This setting takes effect only after you restart the projector.
②	LAN 2 port	The IP Address of **LAN 2** port is fixed to 192.168.254.241.

Table 19

6.9. Administrator Settings → Time Settings

The **Time Settings** menu allows you to fetch the date and time values for the projector, as per actual requirements:

- Projector Time – Fetch the date and time values from the DCMB.
- Auto Synchronize Date and Time – Fetch the date and time values from an NTP Server. You need to specify the 'NTP Server IP Address' in the field provided.

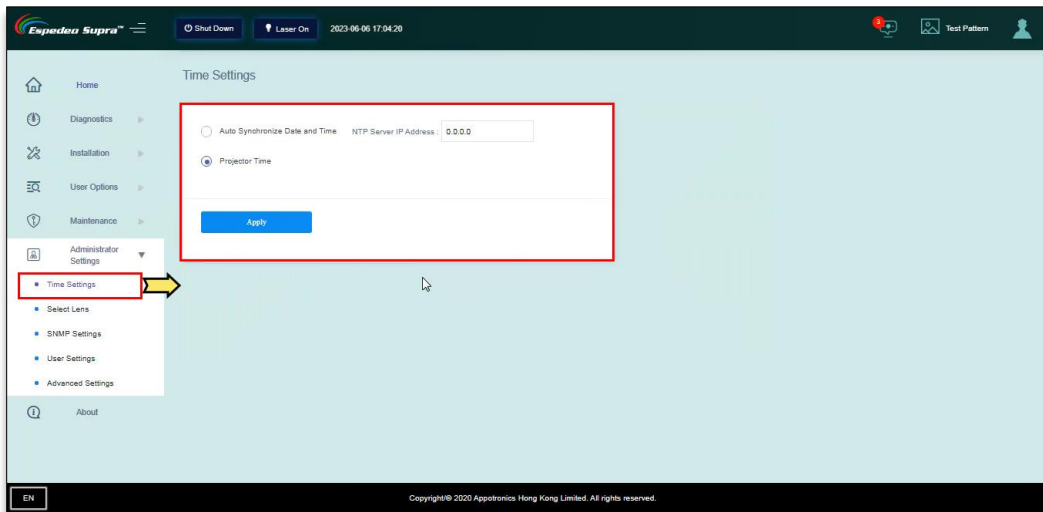Click on the **Apply** button to save the selected time setting.

Figure 38: Administrator Settings → Time Settings

6.10. Administrator Settings → Select Lens

When installing the lens for the first time or changing the lens due to lens damage, you need to select the lens model from the Lens drop-down. Click the **Startup** button to initialize the lens. After the initialization is successful, a "Success" message will be shown.
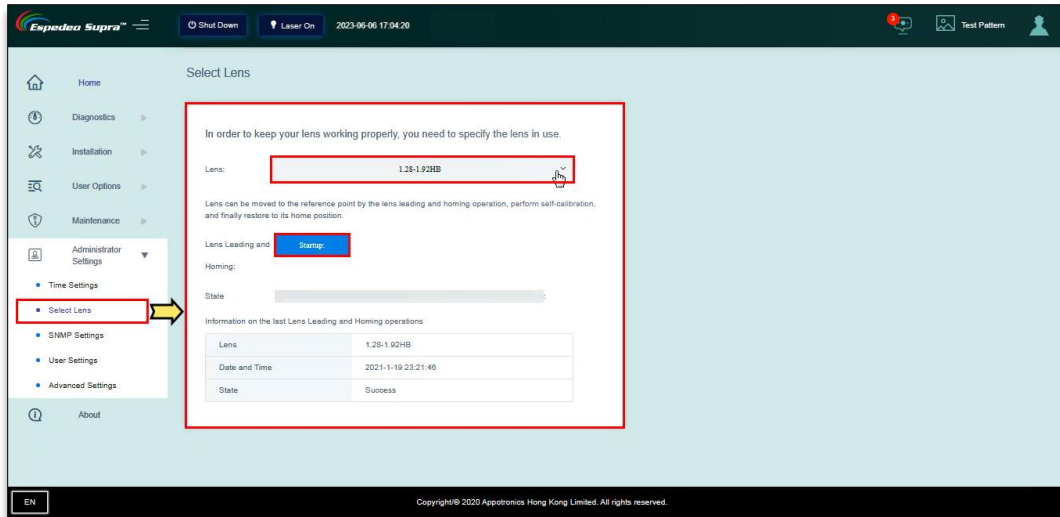

Figure 39: Administrator Settings → Select Lens

7. DCMB Settings

The **Configuration** tab within the DCMB Web UI can be used to change the settings and configure aspects of DCMB's operation.

7.1. DCMB Network Configuration

The DCMB of the Supra-5000 projector has two network interfaces: 'IMB Ethernet 2' which corresponds to the **GIGABIT Port 2** and 'IMB Ethernet 1' which corresponds to the **GIGABIT Port 1** on the DCMB. The 'IMB Ethernet 2' IP Address is set to a default value of 192.168.1.12 as part of the standard configuration. You can update the IP values for both these network interfaces, using the steps mentioned below:

1. Login to the DCMB Web UI with 'Maintenance' user-level access.
2. Under the **Configuration** tab, click on the **System** sub-tab.
3. Scroll down to the **Network Configuration** section.
4. Enter the IP values# for IMB Ethernet 2, Subnet Mask and Gateway**.**
5. As an option, you may also mention a Secondary IP Address and Subnet Mask for the DCMB, by checking the IMB Ethernet 1 checkbox. This can be used to connect to the Cinema's Content network. Make sure that the 'IMB Ethernet 2' and 'IMB Ethernet 1' IP Address belong to different subnets.
6. Once the settings have been entered, click **Validate IPs** button to check all the IP Addresses entered for their correctness.
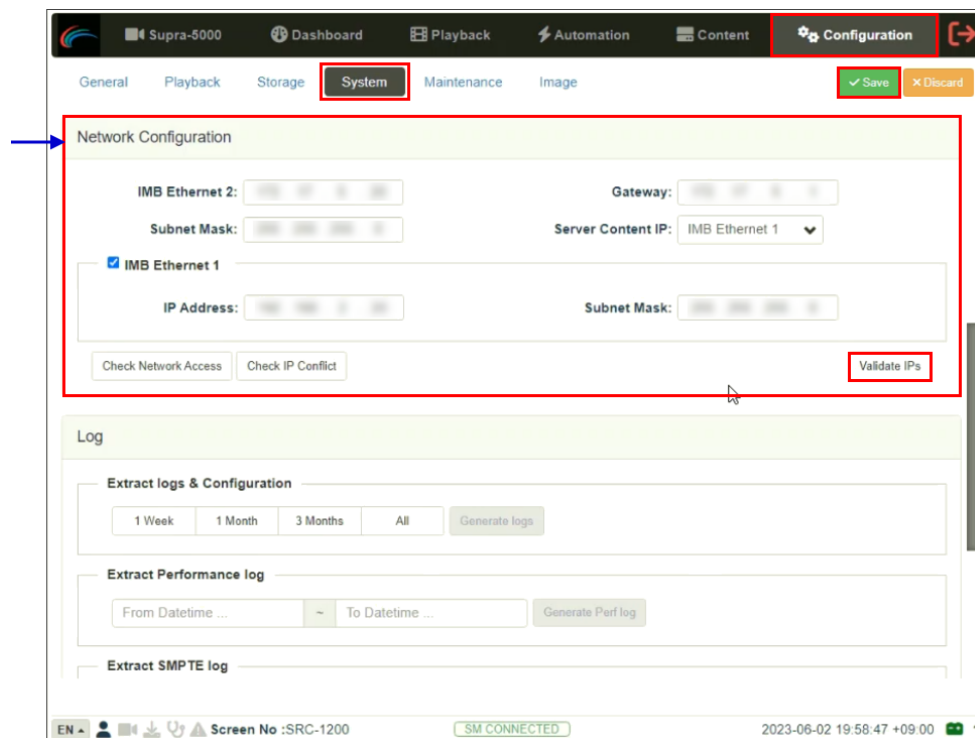

Figure 40: DCMB Network Configuration

7. If all of the IP values are valid, a pop-up window will be shown with the result as "PASS" along with the *Current* and *Target IP values* (as shown in **Figure 41**). If not, then the pop-up window will display the errors found in the new network configuration. Click on **OK** to exit.
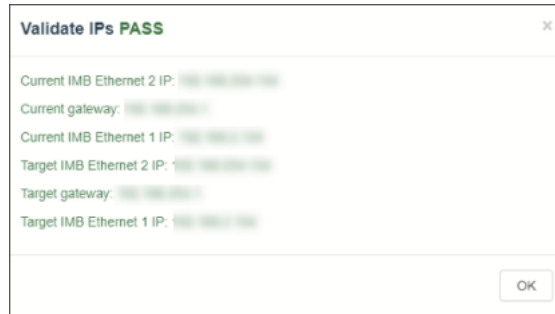

Figure 41: Validate IPs

8. Click on the **Save** button on the top right corner of the page to save the new network configuration.

*# Please make sure the IP Addresses assigned to **IMB Ethernet 2** and **IMB Ethernet 1** network interfaces of the DCMB are unique and do not conflict with the IP values assigned to other devices in the Cinema.*

7.2. DCMB Storage Configuration

To configure the storage for the Supra-5000 projector, you can follow the steps mentioned below:

1. Login to the DCMB Web UI with 'Maintenance' user-level access.
2. Under the **Configuration** tab, click on the **Storage** sub-tab.
3. Go to the 'IMB Storage' section.
4. Under the Storage Type drop-down the following options are available:

   a. **CineCache™:** Select this option to use the built-in CineCache™ as storage.

   b. **NAS:** Configure a Network-Attached Storage (NAS) as data storage. Please contact Espedeo Holdings Ltd. for more information regarding qualified NAS models.

5. To configure the DCMB to use the integrated CineCache™ as the primary storage device, select 'CineCache' from the Storage Type drop-down. However, in case a Network Attached Storage needs to be used as the primary storage device, select 'NAS' from the Storage Type drop-down and mention the IP Address and NFSv3 Share folder path for the NAS device.
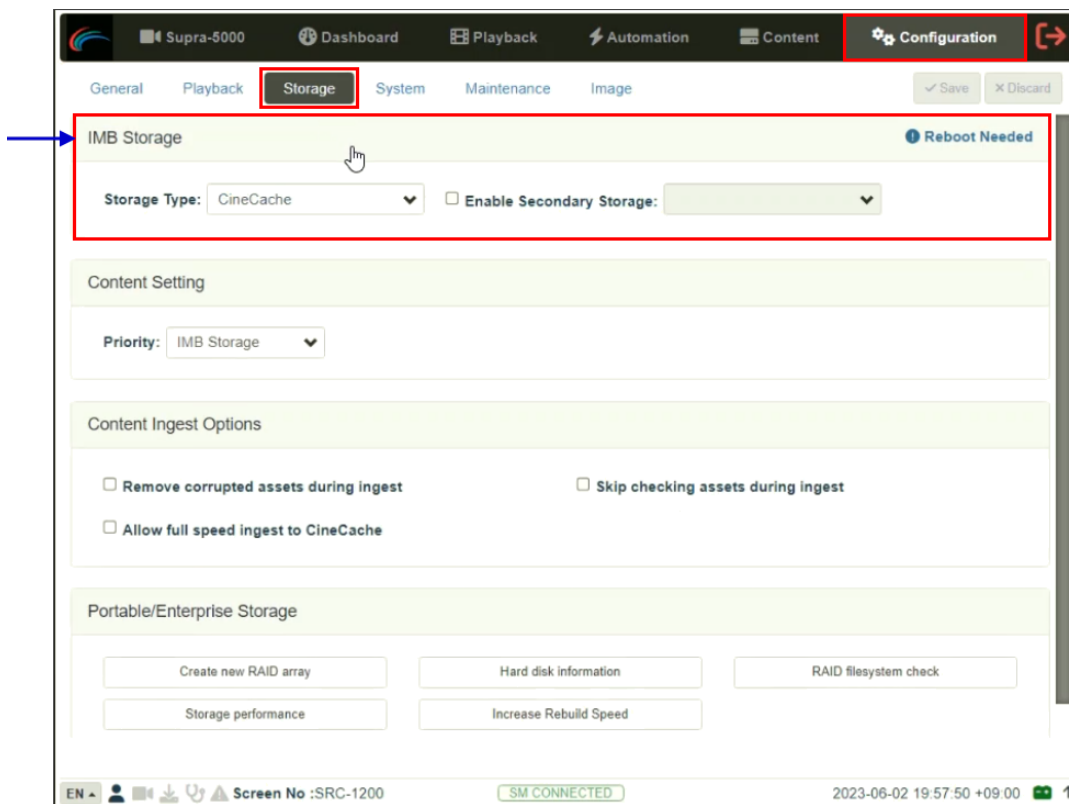

Figure 42: DCMB Storage Configuration

6. Go to the **Dashboard** tab**,** click **Restart**, followed by **OK** to confirm (as shown in **Figure 43**). This is to ensure all components in the DCMB are able to detect the selected storage after the restart.
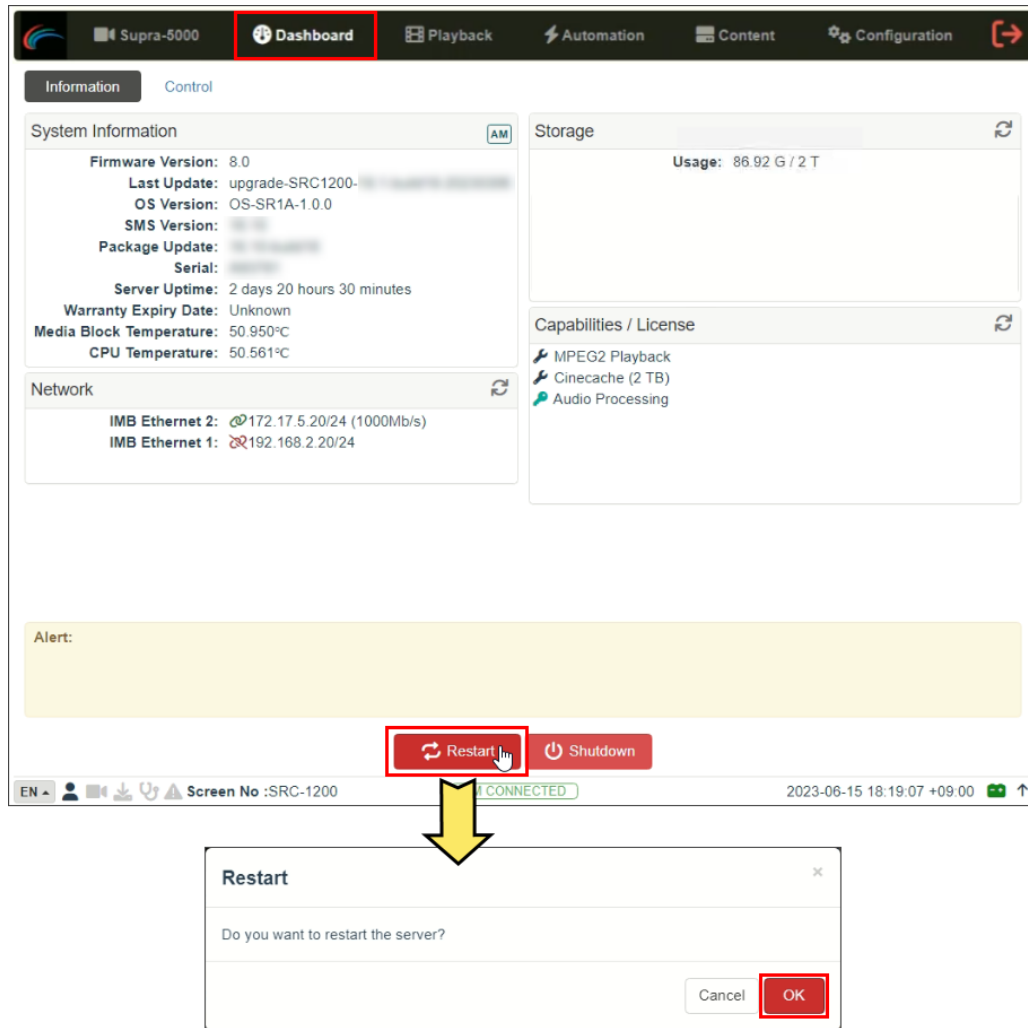

Figure 43: Restart DCMB after changes

7. The DCMB will restart and use the selected option for storage.

Please Note: For the **GDC Cinema Automation 2.0 (CA 2.0)** setup with Centralized Playback, please choose 'CineCache' as the primary storage in Storage Type along with Priority as 'Attached Storage'.

For a non-CA 2.0 setup, please choose either 'CineCache' or 'NAS' as primary storage in Storage Type along with the Priority as 'IMB Storage'.

7.3. DCMB Time Zone Setup

The DCMB of the Supra-5000 projector may or may not have the local time zone set as per your region. In order to change the time zone on the DCMB, you can follow the steps mentioned below:

1. Login to the DCMB Web UI with 'Maintenance' user-level access.
2. Under the **Configuration** tab, click on the **System** sub-tab.
3. Go to the 'Configure TimeZone' section.
4. Select the required Region/City from the TimeZone Select: dropdown menu.
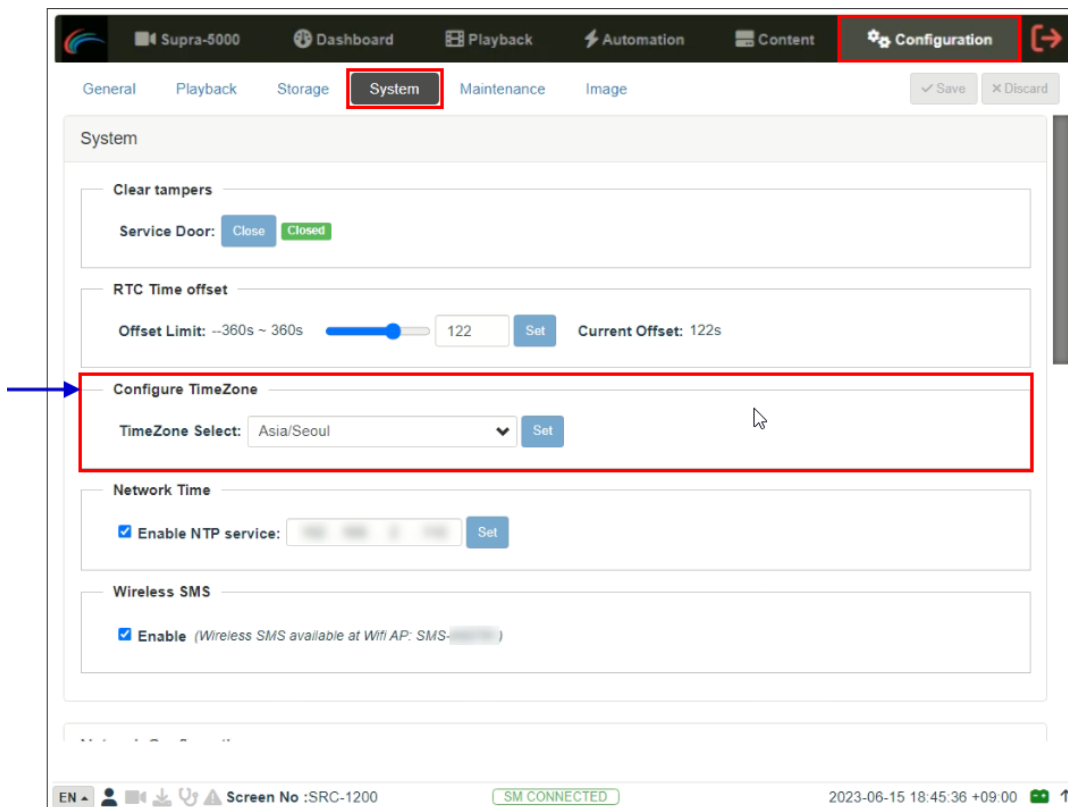5. Click **Save** to save the timezone setting.

Figure 44: Select DCMB TimeZone

Please Note: After setting the timezone, a system alert will be displayed for rebooting the DCMB. It is recommended that the DCMB should be rebooted, after setting the timezone.

7.4. Content Ingest Management

An ingest source must be configured before content can be transferred to the DCMB. This section shows the how to ingest content from two different source types. The same steps can be followed to setup and access other content ingest sources as well.

7.4.1. Content Ingest from a USB Drive

The following steps describe how to ingest content from an external USB drive:

1. Under the **Content** tab, click on the **Source** sub-tab. Select the **Manage** option.
2. From the Source column on the left, select 'USB DRIVE'.
3. Select the *Storage Device name* and *Drive partition* assigned by the DCMB.
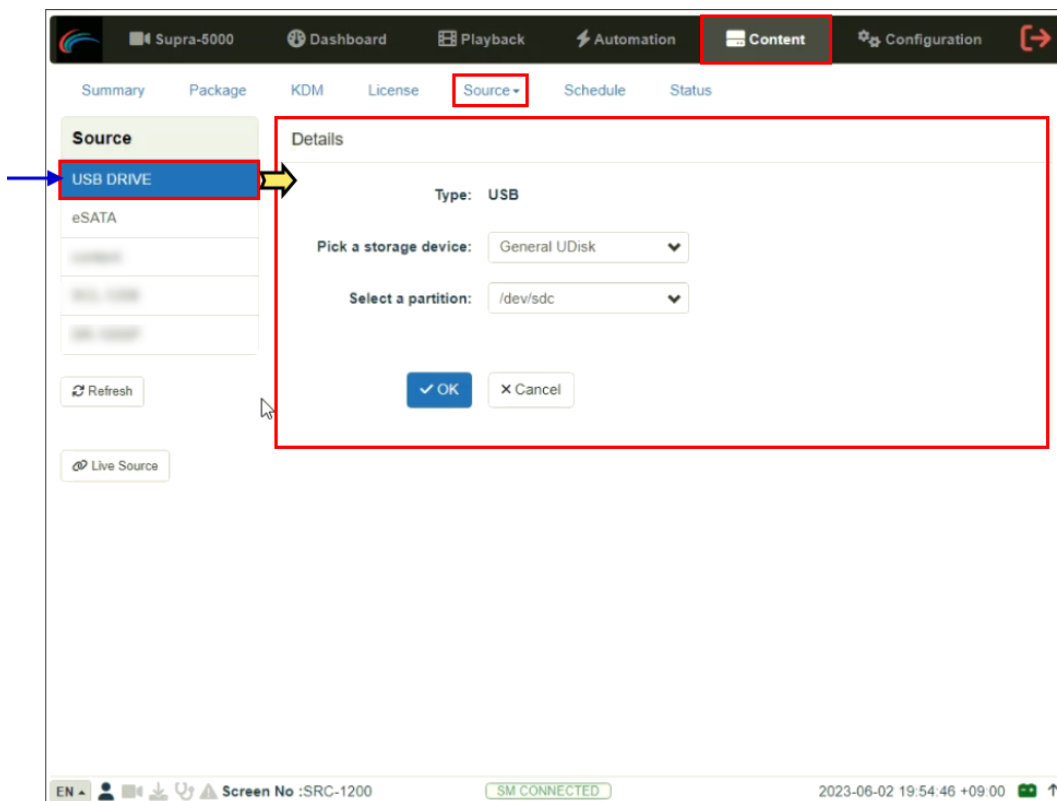4. Click on the **OK** button to mount the USB drive and select content for ingest.

Figure 45: Content Ingest from USB Drive

7.4.2. Content Ingest from an FTP Server

The following steps describe how to ingest content from an external USB drive:

1. Under the **Content** tab, click on the **Source** sub-tab. Select the **Manage** option.
2. Under the Source column on the left, click on the **+ Create** button to add a new ingest source.
3. Under the Details section, select 'FTP' from the **Type** drop-down. Enter the *Name, IP Address, Port, Source Path, Username, Password* for the FTP Server.
4. Click the **Save** button to save the FTP details.
5. Once added the FTP Source is added, you can select it from the Source column and click on the **Open** button to ingest content.
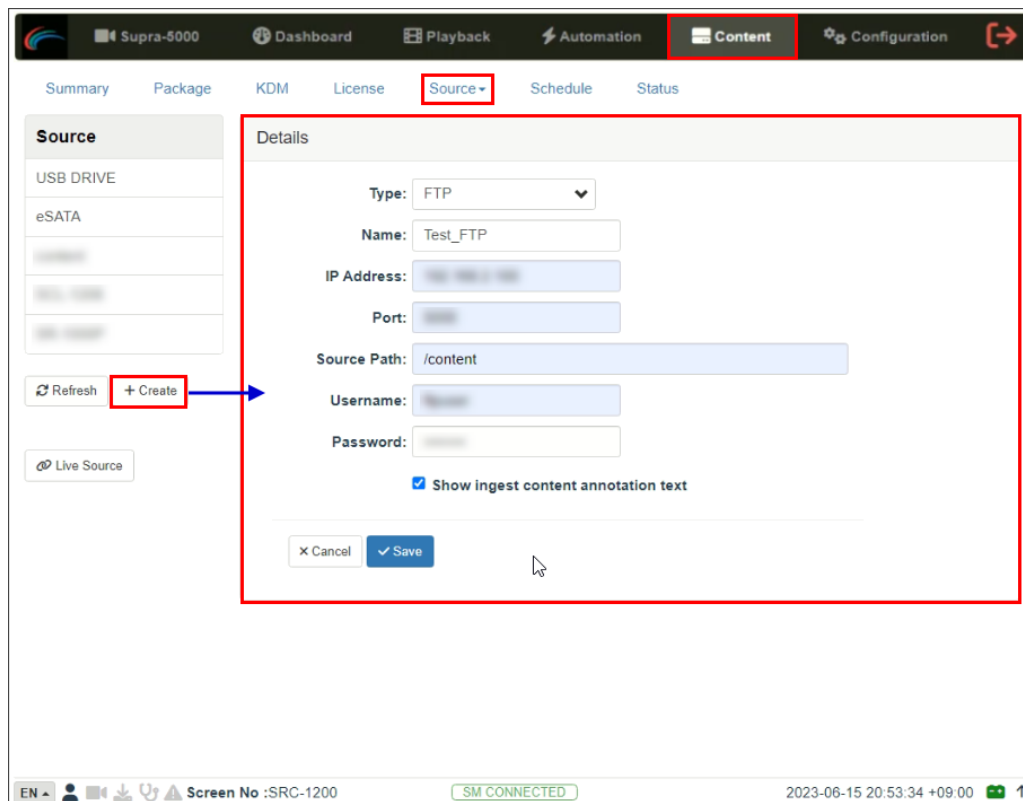

Figure 46: Content Ingest from FTP Server

⚠ **NOTE:**
For more information regarding browsing the selected ingest source, ingesting content, KDMs and licenses as well live-playing content, refer to the Espedeo Supra-5000 User Manual.

7.5. DCMB Audio Setup

The DCMB of the Supra-5000 projector features AES digital audio signal via two RJ-45 Outputs. For compatibility with most audio processors, a standard RJ-45 to DB25 connector (refer to **Figure 47**) is provided as part of standard packaging.

Figure 47: RJ-45 to DB25 connector

Refer to **Figure 48** for RJ-45→DB25 pinout for a traditional audio connector.
Refer to **Figure 49** for RJ-45→DB25 pinout for CP750/JSD80 audio connector.
Refer to **Figure 50** for AES Audio RJ-45 pinout.

A-TOP (RJ45) (Female)	Channel	DB25 (25Pin) (Female)
Pin1	AES Out 1+	24
Pin2	AES Out 1-	12
Pin3	AES Out 2+	10
Pin4	AES Out 3+	21
Pin5	AES Out 3-	9
Pin6	AES Out 2-	23
Pin7	AES Out 4+	7
Pin8	AES Out 4-	20
A-BOT (RJ45) (Female)	Channel	DB25 (25Pin) (Female)
Pin1	AES Out 5+	18
Pin2	AES Out 5-	6
Pin3	AES Out 6+	4
Pin4	AES Out 7+	15
Pin5	AES Out 7-	3
Pin6	AES Out 6-	17
Pin7	AES Out 8+	1
Pin8	AES Out 8-	14

Figure 48: RJ-45→DB25 pinout for a traditional audio connector

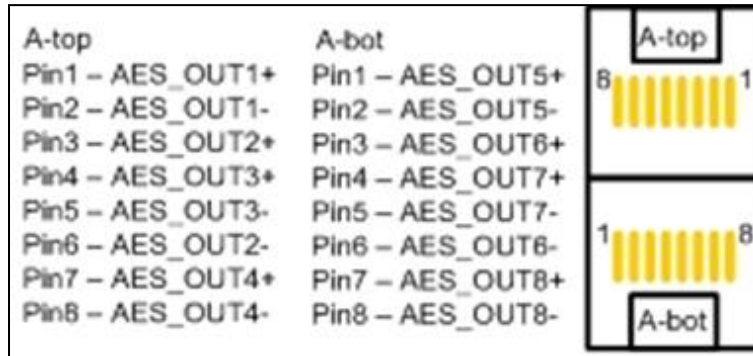| A-TOP (RJ45) (Female)	Channel	DB25 (25Pin) (Male)
Pin1	AES Out 1+	14
Pin2	AES Out 1-	2
Pin3	AES Out 2+	3
Pin4	AES Out 3+	17
Pin5	AES Out 3-	5
Pin6	AES Out 2-	16
Pin7	AES Out 4+	6
Pin8	AES Out 4-	19

Figure 49: RJ-45→DB25 pinout for CP750/JSD80 audio connector

Figure 50: AES Audio RJ-45 pinout

7.6. DCMB Subtitles

It is recommended to use subtitle overlay for subtitle display. To do so, please check Subtitle Overlay Option under the **Playback** sub-tab of the **Configuration** tab.
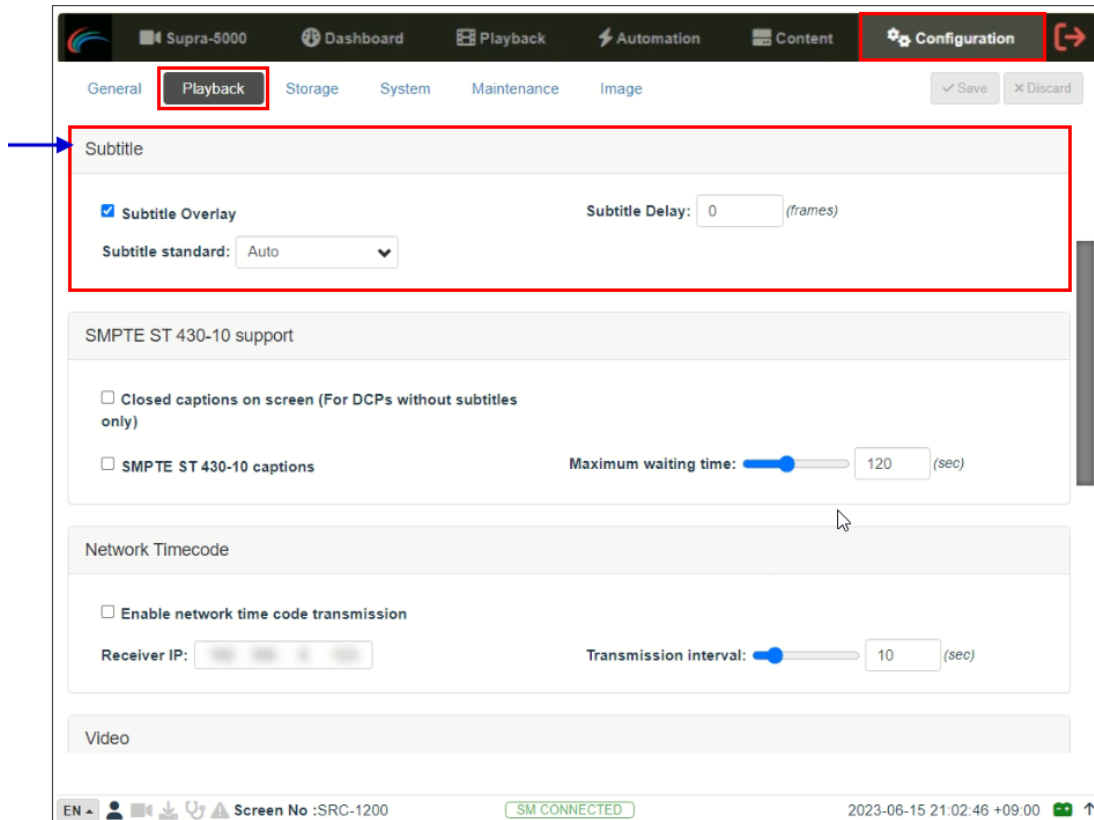
Figure 51: Subtitle settings

7.7. DCMB Automation Setup

The DCMB of the Supra-5000 projector is capable of controlling external devices using its **Automation** interface. This can be used to automate repetitive tasks for the cinema operator to prevent user error.

7.7.1. Automation setup for DCMB GPIO

The DCMB GPIO automation device settings can be configured using the steps mentioned below:

1. Under the **Automation** tab, click the **Device** sub-tab.
2. From the Device list, select 'IMBGPIO'.
3. Enter the device Name, Input Min. Pulse Width (ms) and Output Pulse Width (ms) values.
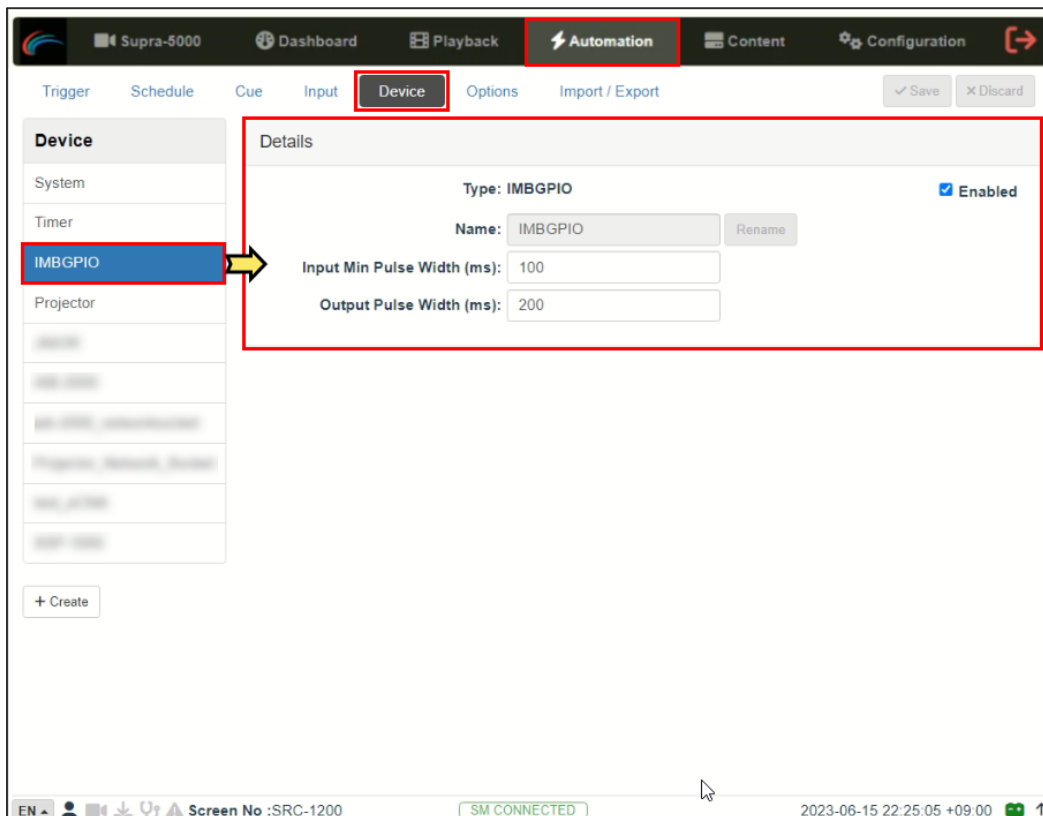
Figure 52: Automation setup for DCMB GPIO

The output pulse width must be at least "100ms". If a different output pulse width is required, the value can be entered in the Output Pulse Width field. Click the **Save** button to save any changes made.

7.7.2. Automation Setup for eCNA Devices

The DCMB supports the eCNA IO automation system. Follow the steps below to configure an eCNA device in the DCMB Automation interface:

1. Under the **Automation** tab, click the **Device** sub-tab.
2. On the left column, click the **+ Create** button**.**
3. Select 'eCNA_IO' as the device Type: and enter the Name: of the eCNA device. Click **OK**.
4. Enter the IP Address of the eCNA device.
5. The eCNA device has many cues/commands available for automation. Multiple cues/commands can be enabled or disabled by selecting them after selecting the corresponding options under the Server events, eCNA controls, eCNA status and eCNA event report tabs. All cues are disabled by default. All enabled cues will be displayed on the right, under each of these tabs. To disable a particular cue, click on corresponding **'x'** icon against it.
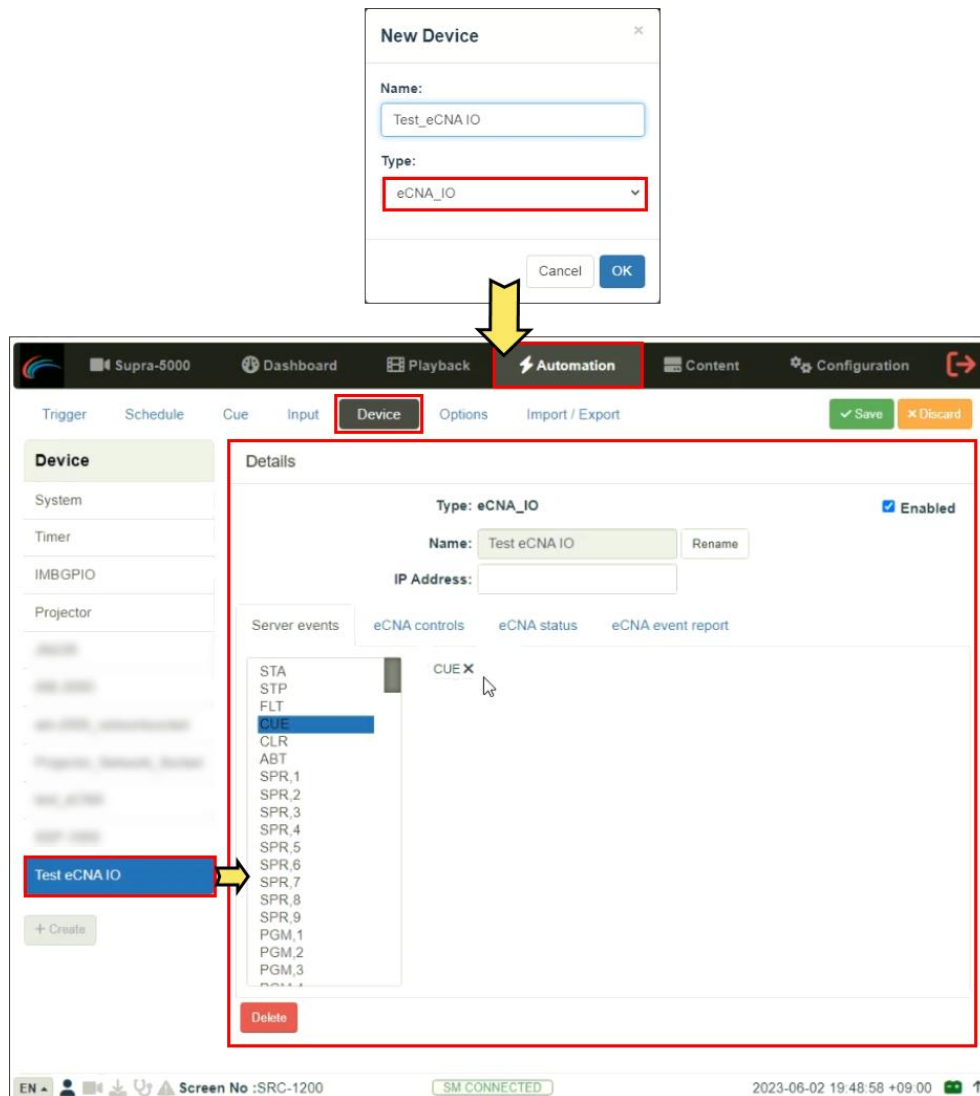6. Click **Save** to save the settings.

Figure 53: Automation Setup for eCNA IO Devices

7.7.3. Automation Setup for JNIOR Devices

The DCMB supports the JNIOR Ethernet I/O controller device. Follow the steps below to configure a JNIOR device in the DCMB Automation interface:

1. Under the **Automation** tab, click the **Device** sub-tab.
2. On the left column, click the **+ Create** button.
7. Select 'JNIOR_IO' as the device Type and enter the Name of the JNIOR device. Click **OK**.
3. Enter the IP Address of the JNIOR device.
4. The settings for Port, Login and Password are set to the default values for JNIOR devices, if left blank. Enter the Input Min. Pulse Width (ms) and Output Pulse Width (ms) values.
5. Click **Save** to save the settings.
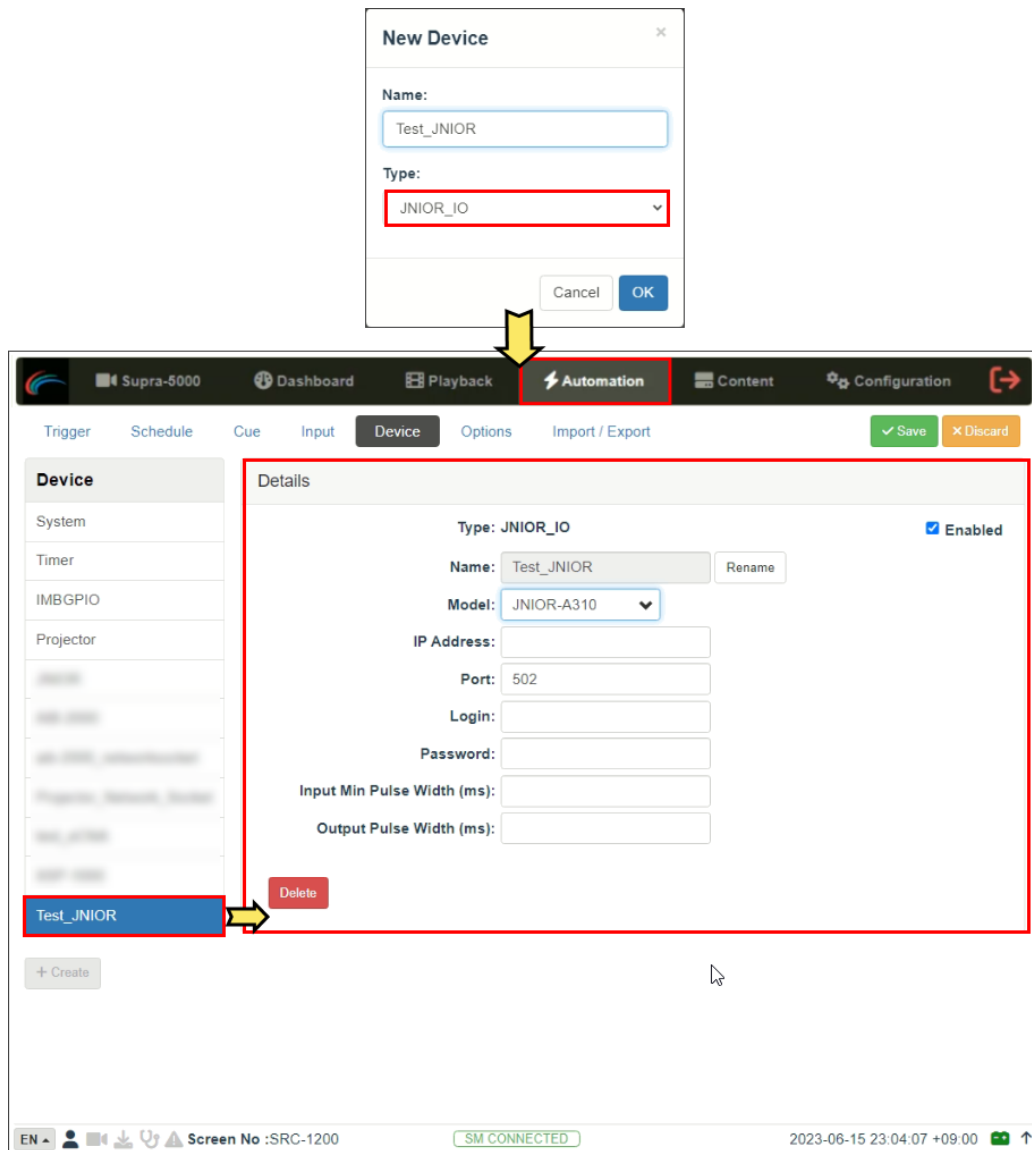
Figure 54: Automation Setup for JNIOR Devices

7.7.4. Automation Setup for Christie ACT Devices

The DCMB supports the Christie ACT automation device. Follow the steps mentioned below to configure a Christie ACT device in the DCMB Automation interface:

1. Under the **Automation** tab, click the **Device** sub-tab.
2. On the left column, click the **+ Create** button.
3. Select 'ChristieACT' as the device Type and enter the Name of the ChristieACT device. Click **OK**.
4. Enter the IP Address of the ChristieACT device.
5. The default setting for Local Port is displayed on the settings for the ChristieACT device. Change this value if needed.
6. Default Control Cues will be set up for a new ChristieACT automation device. Control Cues can be added or removed by clicking the + or – buttons.
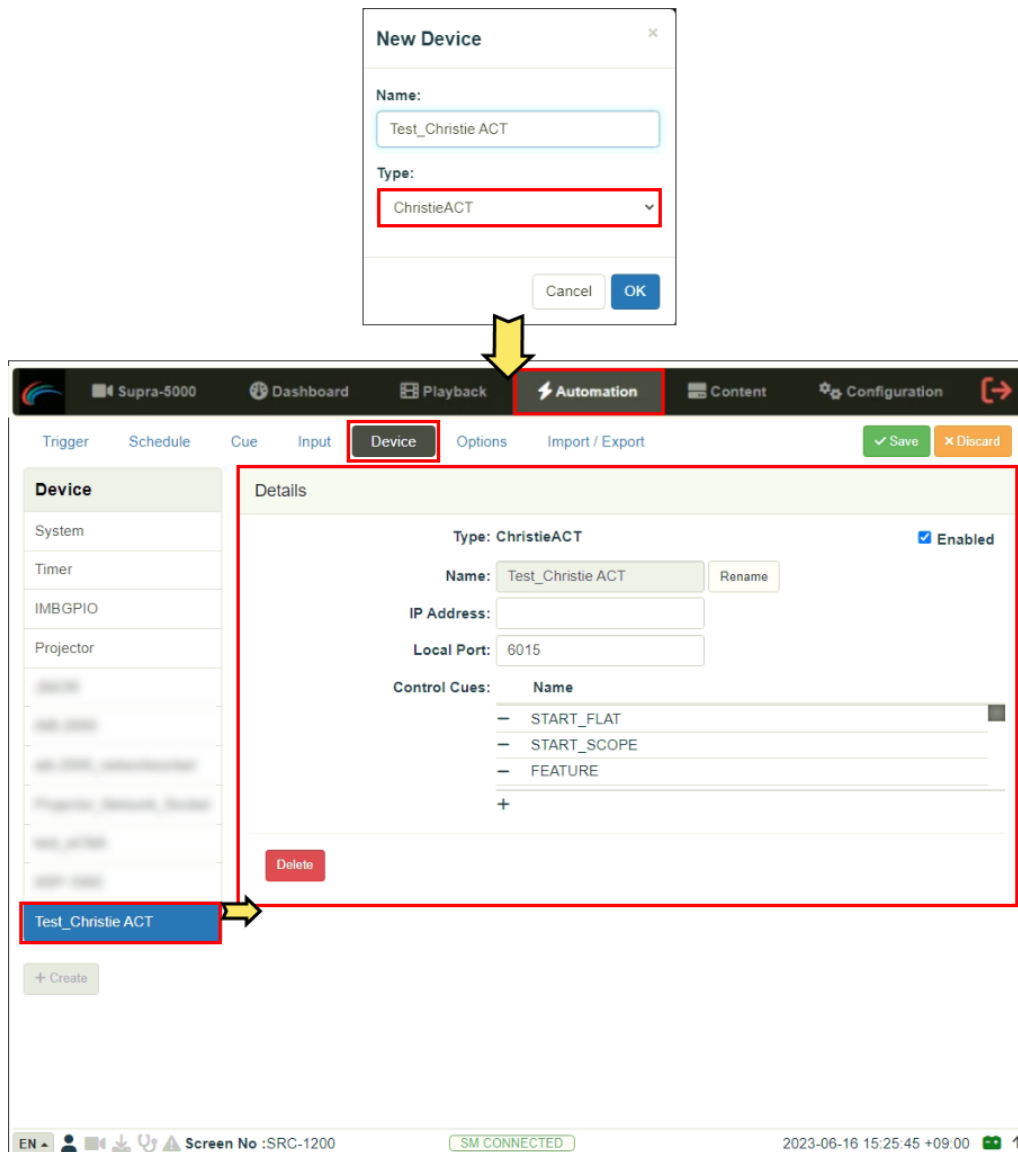7. Click **Save** to save the settings.

Figure 55: Automation Setup for Christie ACT Devices

7.7.5. Automation Setup for Dolby Devices

The DCMB supports automation for the Dolby Sound Processors. Follow the steps below to configure a Dolby device in the DCMB Automation interface. In this example, the added device refers to the Dolby CP850 Sound Processor.

1. Under the **Automation** tab, click the **Device** sub-tab.
2. On the left column, click the **+Create** button.
3. Select 'DolbyCP850' as the device Type and enter the Name of the Dolby CP850 device. Click **OK**.
4. Enter the IP Address of the Dolby CP850 device.
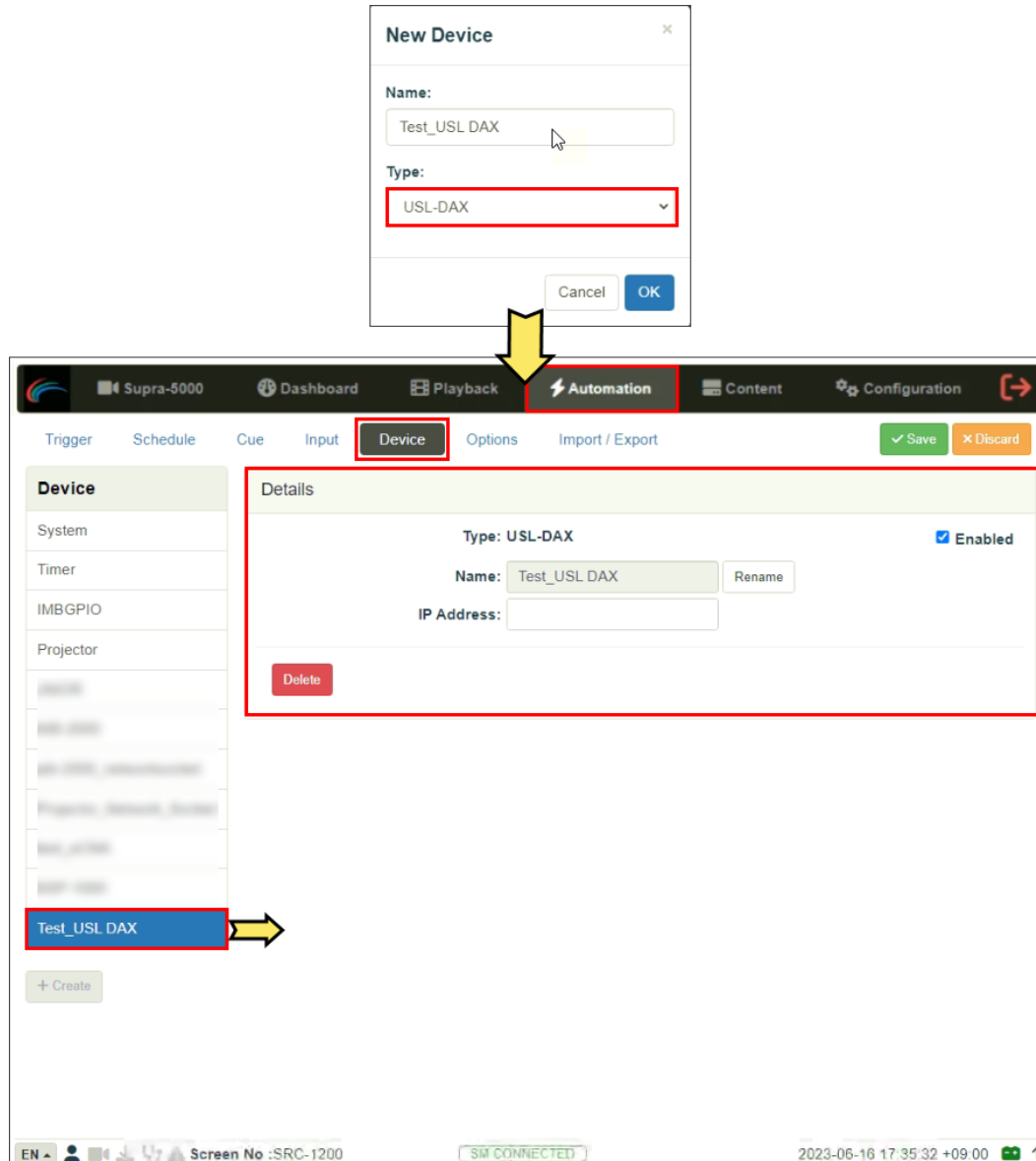5. Click **Save** to save the settings.
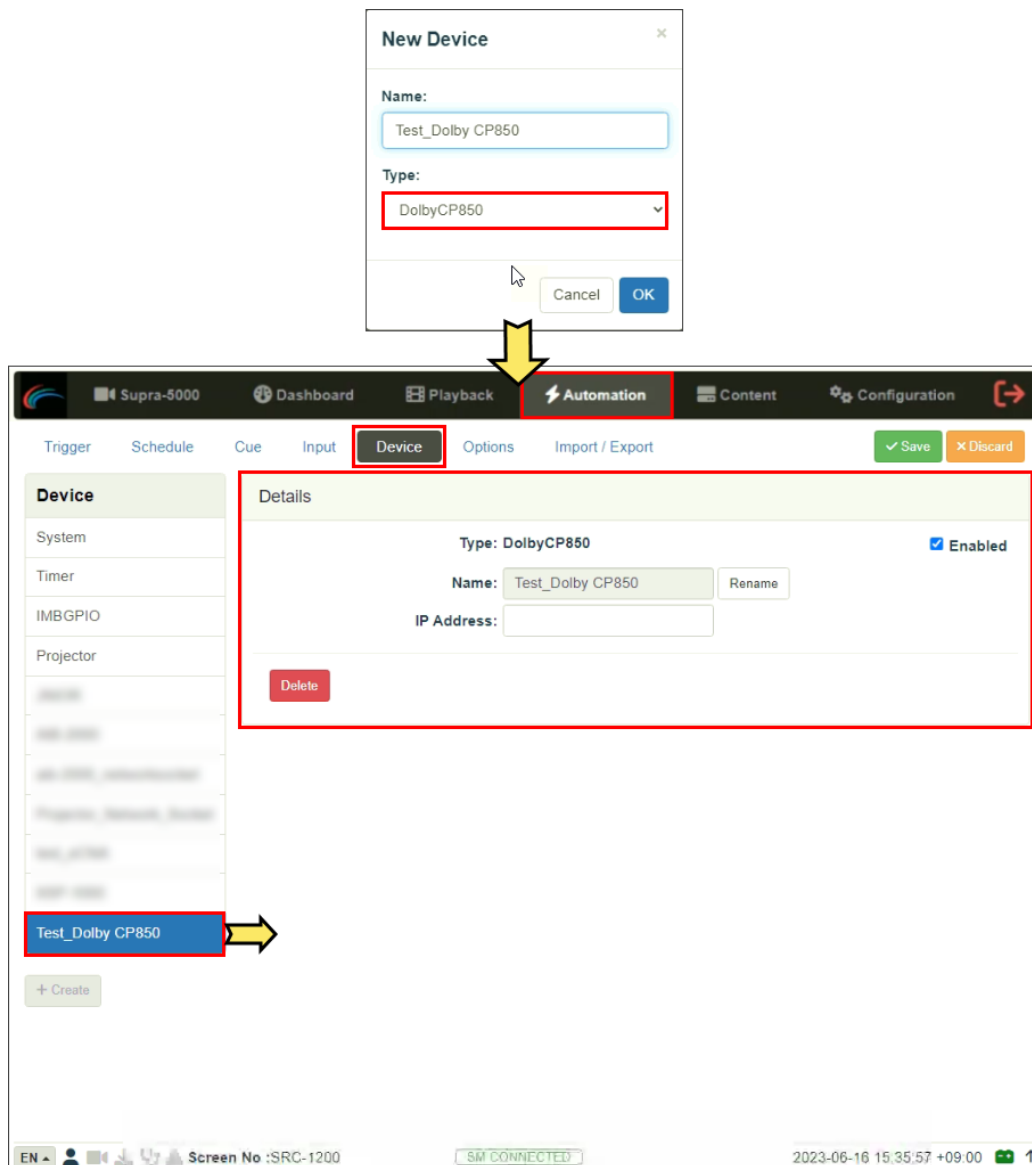
Figure 56: Automation Setup for Dolby Devices

7.7.6. Automation Setup for USL DAX Devices

The DCMB supports automation for USL DAX Sound Processor. Follow the steps below to configure a USL DAX device in the DCMB Automation interface.

1. Under the **Automation** tab, click the **Device** sub-tab.
2. On the left column, click the **+Create** button.
3. Select 'USL-DAX' as the device Type and enter the Name of the USL DAX device. Click **OK**.
4. Enter the IP Address of the USL DAX device.
5. Click **Save** to save the settings.

Figure 57: Automation Setup for USL DAX Devices

7.7.7. Automation Setup for USL JSD Devices

The DCMB supports automation for USL JSD-80 and JSD-100 Sound Processor. Follow the steps below to configure a USL JSD device in the DCMB Automation interface.

1. Under the **Automation** tab, click the **Device** sub-tab.
2. On the left column, click the **+Create** button.
3. Select 'USL-JSD' as the device Type and enter the Name of the USL JSD device. Click **OK**.
4. Enter the IP Address of the USL JSD device.
5. Select the correct Model ('JSD-80' or 'JSD-100') of the device the DCMB is connected to.
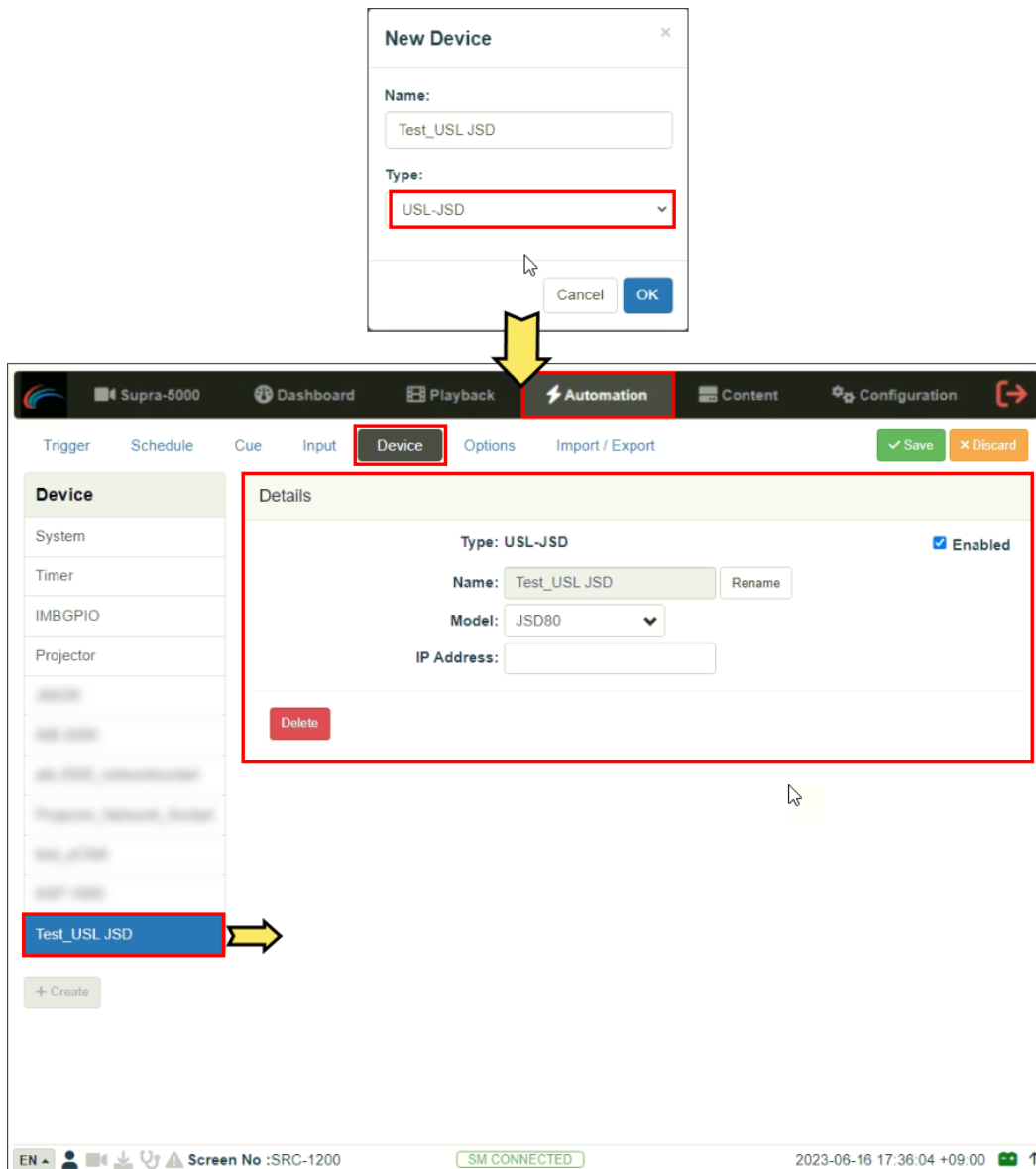6. Click **Save** to save the settings.

Figure 58: Automation Setup for USL JSD Devices

7.7.8. Automation Setup for AIB-2000 Audio IO Box

The DCMB supports automation for AIB-2000 Audio IO (Input-Output) Box. Follow the steps below to configure an AIB-2000 device in the DCMB Automation interface.

1. Under the **Automation** tab, click the **Device** sub-tab.
2. On the left column, click the **+Create** button.
3. Select 'AIB-2000' as the device Type and enter the Name of the AIB-2000 device. Click **OK**.
4. Select 'Network' as the Connection type.
5. Enter the IP Address of the AIB-2000 device connected to the DCMB.
6. Click **Save** to save the settings.

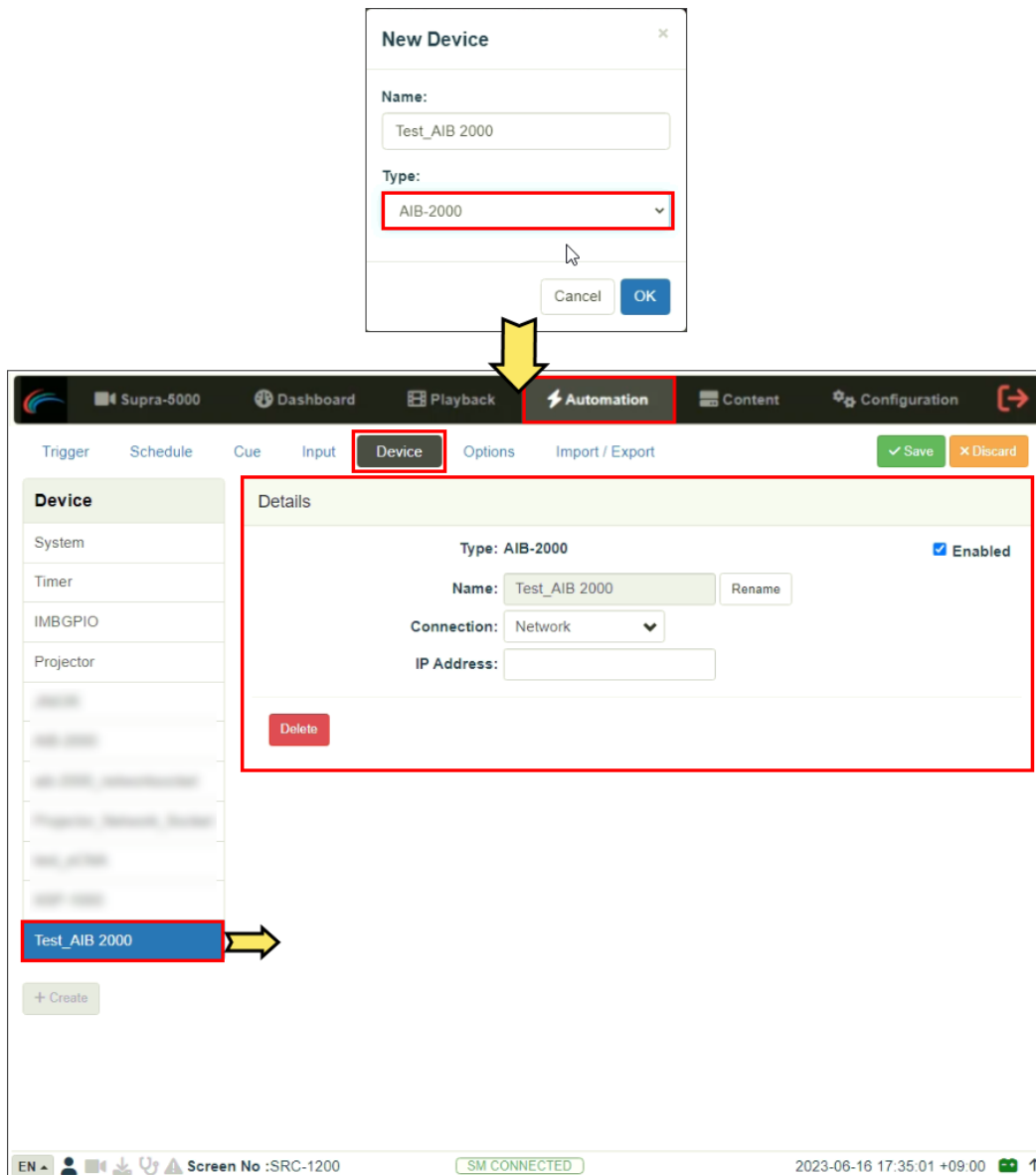**Figure 59: Automation Setup for AIB-2000 Audio IO Box**

7.8. DCMB 3D Settings for PM-2000B 3D System

In addition to the 3D File settings mentioned under **Section 6.7.1**, you need to follow the steps mentioned below to setup the Espedeo PM-2000B Polarized 3D System:

1. Login to the DCMB Web UI with **Maintenance** user-level access.
2. Under the **Configuration** tab, click on the **Image** sub-tab.
3. Go to **Image Source → 3D Settings** section.
4. Set the 3D Sync Polarity to "True" (same value as L/R output reference polarity in the 3D File).
5. Set the Output Delay to "-120μs" (same value as Reference Delay in the 3D File).
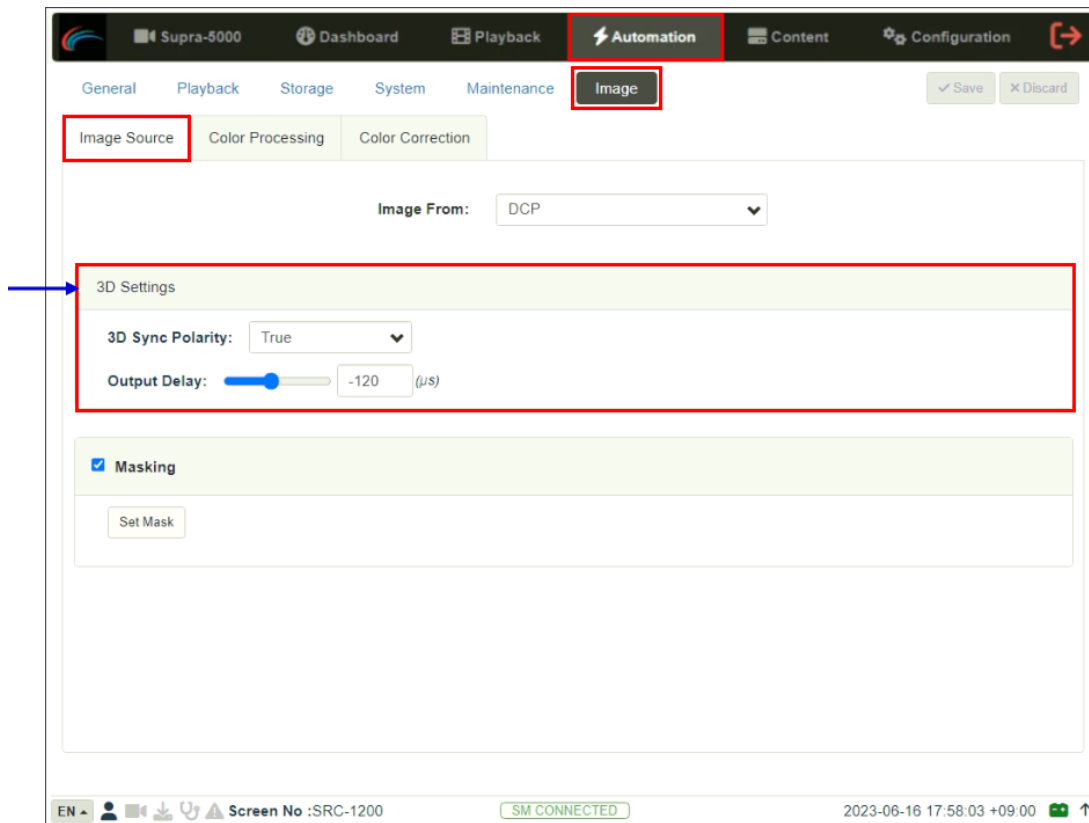6. Click **Save** to save the settings.

Figure 60: DCMB 3D Settings for PM-2000B 3D System

8. Component Engineering TA-10 Setup

The Component Engineering TA-10 can be used for cinema automation with the Supra-5000 projector. It requires that the TA-10 be wired in a particular configuration. A wiring diagram can be seen in **Figure 61**.

The TA-10 is connected to the DCMB using the GPIO input/output port. Configure event labels with the GPIO device to trigger the TA-10.
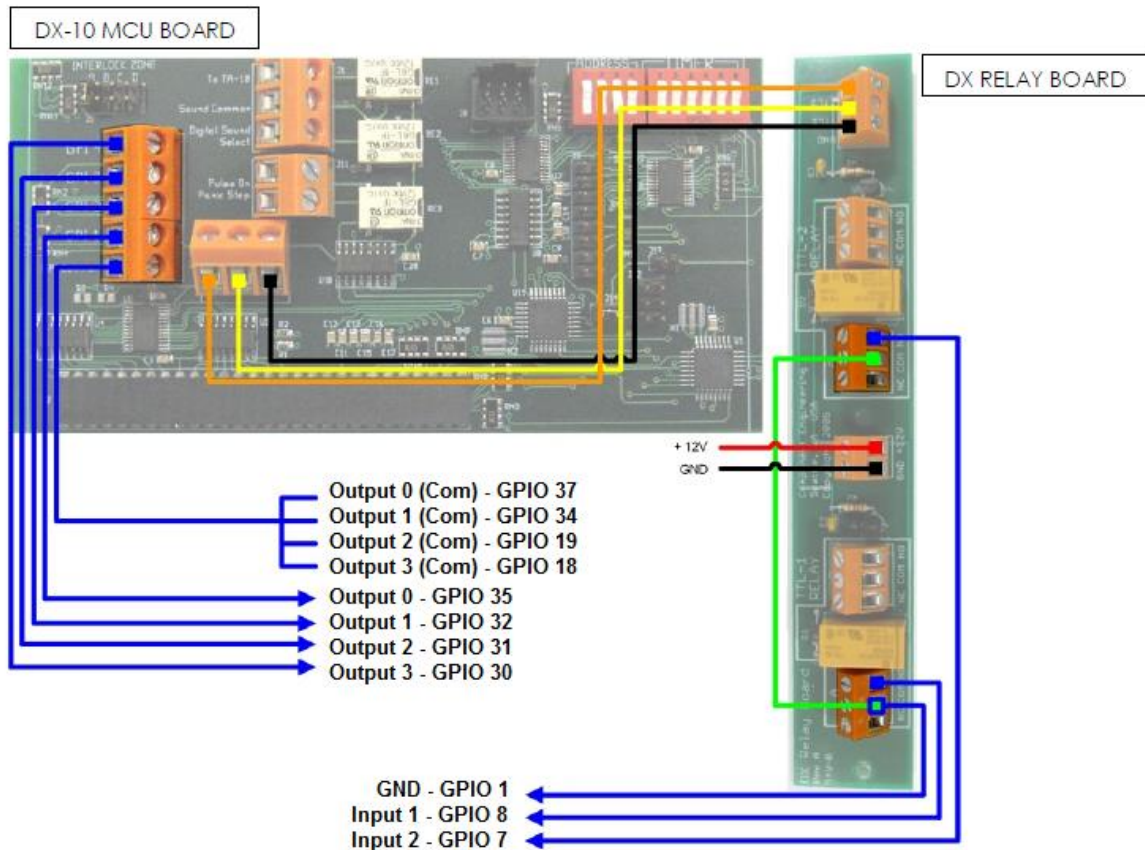

Figure 61: Component Engineering TA-10 Setup

9. Espedeo Supra-5000 Input and Output

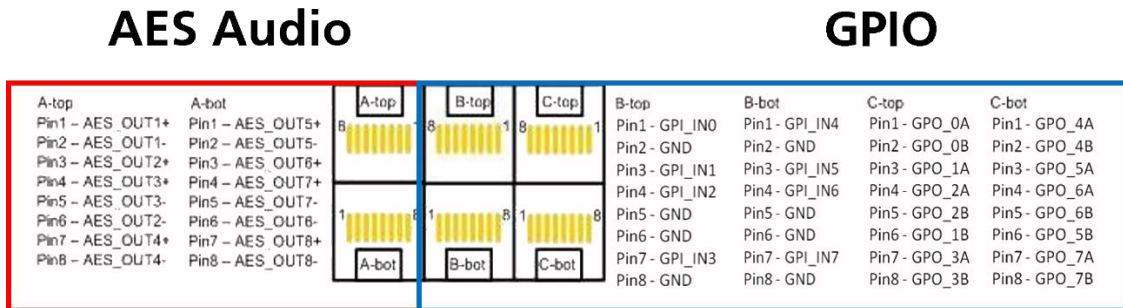## 9.1. AES Audio and GPIO Pinout (DCMB)

Figure 62: AES Audio and GPIO Pinout (DCMB)

9.2. GPIO Power Details (DCMB)

GPIO Input Details:

Vin High min level is 3.5 Volts
Vin Low max level is 1.5 Volts
Iin min -20 uA
Iin max +20 uA
(Essentially no current flows; this is a voltage sensing device)
The GPI inputs have a 5.62K Ohm resistor pull-up to an isolated 5 Volts. Shorting the pins would send an input high ("dry contact")

GPIO Output Details:

Outputs use a solid-state relay
Max voltage across relay contacts GPO_nA and GPO_nB = 200 Volts
Relay ON-resistance: Min = 6 / Typ = 10 / Max = 15 ohms
Relay Current limit: Min = 300 / Typ = 360 / Max = 460 mA
Relay output power dissipation (continuous) = 600 mW

9.3. Audio Output from the Projector (DCMB)

The DCMB features 16-channel AES3 digital audio signal via 2x RJ45 Outputs (**A-top** and **A-bot**). Channels 1 to 8 are available on the **A-top** connector and carry the processed 6 or 8 channel main audio tracks for 5.1 and 7.1 DCPs respectively, assuming that the DCPs follow the 16 channels ISDCF recommended channel order. Channels 9 to 16 are used for Hi/Vi-N, Booth monitor, LTC (4D systems), D-Box Motion Data signal, etc.

NOTE: If the Audio Processing feature on the DCMB is disabled; the Channels 1 to 8 and Channels 9 to 16 will carry unprocessed audio and an external audio processor capable of processing 16-channels needs to be used.

9.4. Audio Input to the Projector (PIB)

9.4.1. HDMI Input

The Supra-5000 allows direct input of 8 channels PCM audio via **HDMI IN 1** and **HDMI IN 2** ports on the PIB. The HDMI output of the source needs to be set to **LPCM** audio format.

9.5. Examples of a complete Audio input/output solution (for 5.1/7.1 Audio formats)

9.5.1. Audio I/O solution using AIB-2000 (suitable for connection to analog Amplifiers/Crossovers)

The **AIB-2000** has inputs for Microphone, Non-Sync and 7.1 channel analog input which can be routed directly to the analog outputs of the device, as shown in **Figure 63**.

AES3 digital audio outputs (<u>Channels 1 to 8</u>) from the DCMB are fed to the digital inputs on the AIB-2000 and converted to analog outputs which can be interfaced with analog audio equipment.
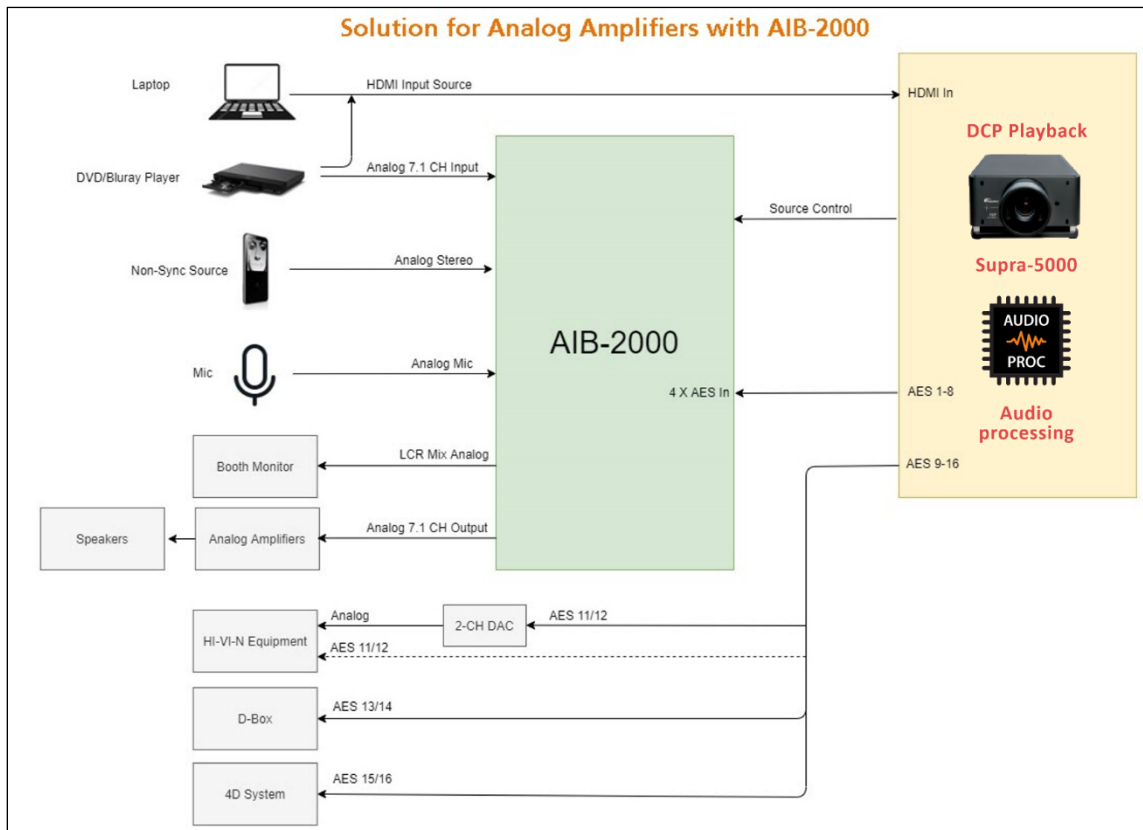
Figure 63: Audio I/O solution using AIB-2000 (for analog Amplifiers/Crossovers)

Please Note: The DCMB Automation should be used to switch between the analog sources and the 8 channel AES3 output from the DCMB to the AIB-2000 to ensure that the correct source is routed to the sound system.

9.5.1.1. Connection Requirements

SN	Device Type	Description
1	**Connection to analog Amplifier**[*]	Connect the **8 channel Analog unbal. output** of the AIB-2000 to the inputs of analog Amplifiers/Crossovers using appropriate line level audio cables and connectors.
2	**Connection to Hi/Vi-N devices**	**AES output pair 11 and 12** on the DCMB carries the Hi and Vi-N channels respectively (assuming DCP's follow the 16 channels ISDCF recommended channel order). The **AES pair 11/12** is available on the **RJ45 Connector** labeled **A-bot** on the DCMB and can be connected to the Hi/Vi-N device either directly or via a 2 channel D/A converter depending on whether the Hi/Vi-N device accepts AES3 or analog inputs. Appropriate cable and connectors should be chosen, keeping in mind the connectors used on the Hi/Vi-N device and 2-channel D/A converter (if used).
3	**Connection to 4D systems**	**AES output pair 15/16** on the DCMB carries the LTC signal used to sync 4D systems like ScreenX, 4DX and MX4D to the DCMB. The Enable LTC Output on Channel 15/16 option must be checked under **Audio → Configuration** sub-tab of DCMB Web UI. The **AES pair 15/16** is available on the RJ45 Connector labeled **A-bot** on the DCMB and can be connected to the LTC input on the 4D System. Appropriate cable and connectors should be chosen keeping in mind the connector used on the 4D system. **NOTE**: LTC is not an AES3 audio signal although it uses two pins (7 and 8) of the **A-bot** connector on the DCMB which otherwise carries AES3 audio. When enable Enable LTC Output on Channel 15/16 option is checked; pins 7 and 8 carry the LTC signal. As a result, AES3 channels 15 and 16 are not available when LTC is enabled. Pins 7 and 8 of the **A-bot** connector must be wired directly to the LTC inputs of the external 4D system using a suitable cable (please check with the 4D system manufacturer for details). A break out cable may be required to allow pins 7 and 8 to be connected to an external 4D system while allowing pins 1-6 which carry AES3 channels 9-14, to be connected to the audio system.

4	**Connection to D-Box**	**AES output 13** on the DCMB carries the Motion Data signal used by D-Box (assuming DCPs follow the 16 channels ISDCF recommended channel order). The **AES pair 13/14** is available on the **RJ45 Connector** labeled **A-bot** on the DCMB and can be connected to the D-Box system. Appropriate cable and connectors should be chosen keeping in mind the connector used on the D-Box system.
5	**Connecting a Microphone**[*]	A Microphone can be connected to the **MIC. IN** on the front panel of the AIB-2000 using a **Male XLR Connector**. If the microphone requires Phantom power, then press the **+48V** button.
6	**Connecting a Non-Sync source**[*]	A Non-sync source can be connected to the **NON-SYNC IN** on the front panel of the AIB-2000 using Male XLR connectors or to the **NonSync IN** on the back panel using Male stereo **RCA Connectors**. **NS XLR** and **NS RCA** buttons switch the non-sync input between front **XLR** and rear **RCA Connectors** respectively.
7	**Connecting an HDMI source**	An HDMI source can be connected to the **HDMI IN 1** and **HDMI IN 2** ports on the faceplate of the PIB, using an HDMI cable.
8	**Connecting a Booth Monitor**[*]	A Booth monitor can be connected to the **LCR mon** output on the back panel of the AIB-2000 using an **RCA Connector**. Please note that the LCR mon output provides a L+C+R summation of the AES3 outputs from the DCMB.

Table 20

[*] Refer to the 'GDC AIB-2000 User Manual' for more details.

IMPORTANT: Please check and set the levels of the analog input sources to the AIB-2000 appropriately, to avoid any damage to the auditorium speakers.

9.5.2. Audio I/O solution using AIB-2000 (suitable for connection to digital Amplifiers)

It is assumed that the digital Amplifiers have both AES3 digital inputs and analog inputs with automated switching between digital inputs and analog inputs; the AES3 digital output from the DCMB may be fed directly to the amplifier's digital inputs and only the analog sources may be routed via the AIB-2000 to the analog inputs of the Amplifiers.
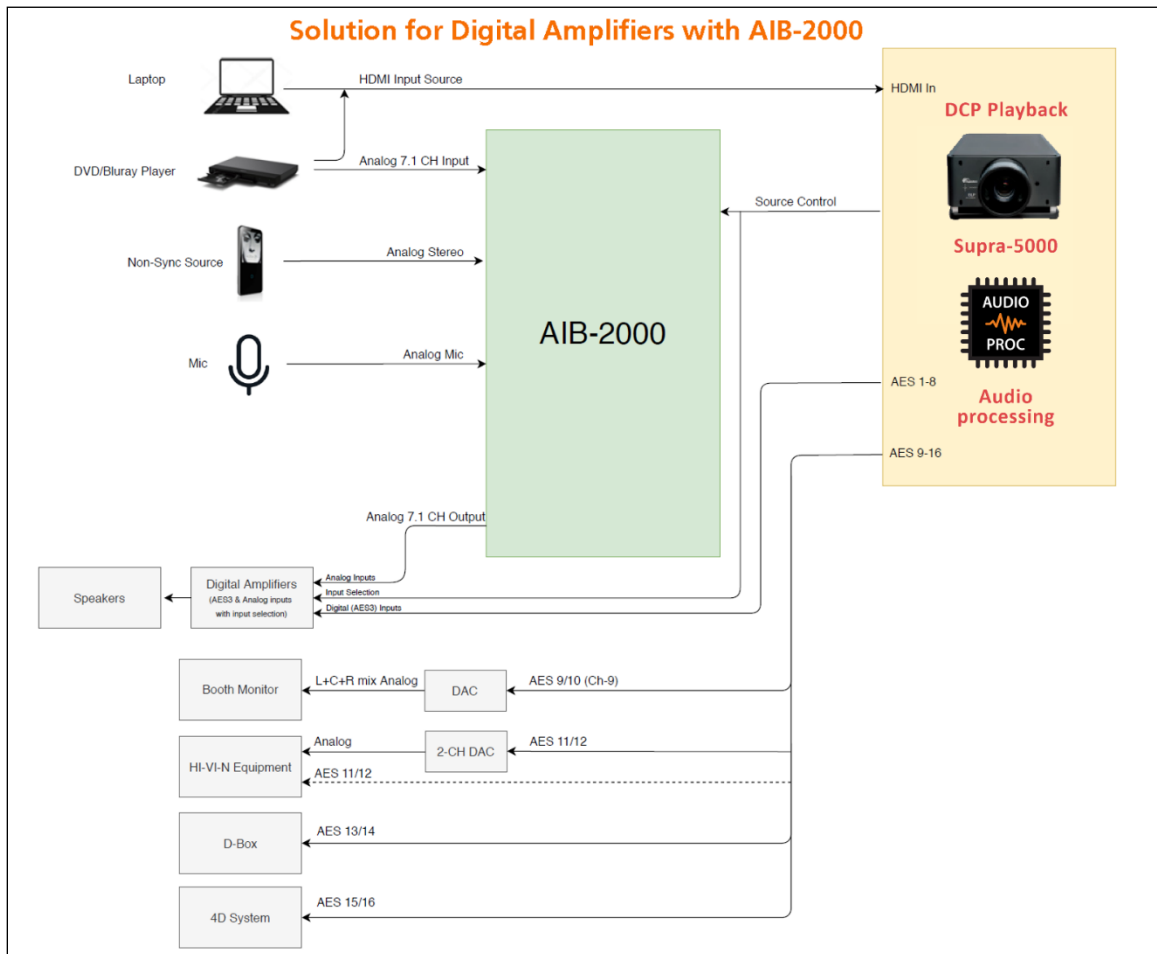

Figure 64: Audio I/O solution using AIB-2000 (for digital Amplifiers)

⚠ **NOTE:**

The DCMB Automation should be used to switch between the analog sources to the AIB-2000 as well as between the analog and digital AES3 inputs on the digital Amplifiers to ensure that the correct source is routed to the sound system.

9.5.2.1. Connection Requirements

SN	Device Type	Description
1	Connection to Digital Amplifiers[*]	Connect the **8 channel Digital AES3** outputs (1-8) of the DCMB available on the **A-top** connector of the DCMB directly to the Digital Amplifiers or Crossovers using good quality shielded CAT6 cable(s).
2	Connection to Hi/Vi-N Devices	The **AES pair 11/12** is available on the **RJ45 Connector** labeled **A-bot** on the DCMB and can be connected to the Hi/Vi-N device either directly or via a **2 channel D/A Converter** depending on whether the Hi/Vi-N device accepts digital (AES3) or analog inputs. Appropriate cable and connectors should be chosen, keeping in mind the connectors used on the Hi/Vi-N device and 2 channel D/A converter (if used).
3	Connection to 4D systems	**AES output pair 15/16** on the DCMB carries the LTC signal used to sync 4D systems like ScreenX, 4DX and MX4D to the DCMB. The Enable LTC Output on Channel 15/16 option must be checked under **Audio → Configuration** sub-tab of DCMB Web UI. The **AES pair 15/16** is available on the **RJ45 Connector** labeled **A-bot** on the DCMB and can be connected to the LTC input on the 4D System. Appropriate cable and connectors should be chosen keeping in mind the connector used on the 4D system. **NOTE**: LTC is not an AES3 audio signal although it uses two pins (7 and 8) of the **A-bot** connector on the DCMB which otherwise carries AES3 audio. When enable Enable LTC Output on Channel 15/16 option is checked; pins 7 and 8 carry the LTC signal. As a result, AES3 channels 15 and 16 are not available when LTC is enabled. Pins 7 and 8 of the **A-bot** connector must be wired directly to the LTC inputs of the external 4D system using a suitable cable (please check with the 4D system manufacturer for details). A break out cable may be required to allow pins 7 and 8 to be connected to an external 4D system while allowing pins 1-6 which carry AES3 channels 9-14, to be connected to the audio system.

4	**Connection to D-Box**	**AES output 13** on the DCMB carries the Motion Data signal used by D-Box (assuming DCPs follow the 16 channels ISDCF recommended channel order). The **AES pair 13/14** is available on the **RJ45 Connector** labeled **A-bot** on the DCMB and can be connected to the D-Box system. Appropriate cable and connectors should be chosen keeping in mind the connector used on the D-Box system.
5	**Connecting a Microphone**[*]	A Microphone can be connected to the **MIC. IN** on the front panel of the AIB-2000 using a **Male XLR Connector**. If the microphone requires Phantom power, then press the **+48V** button.
6	**Connecting a Non-Sync source**[*]	A Non-sync source can be connected to the **NON-SYNC IN** on the front panel of the AIB-2000 using Male XLR connectors or to the **NonSync IN** on the back panel using Male stereo **RCA Connectors**. **NS XLR** and **NS RCA** buttons switch the non-sync input between front **XLR** and rear **RCA Connectors** respectively.
7	**Connecting an HDMI source**	An HDMI source can be connected to the **HDMI IN 1** and **HDMI IN 2** ports on the faceplate of the PIB, using an HDMI cable.
8	**Connecting a Booth Monitor**[*]	**AES pair 9/10** on the DCMB carries a mix of L+C+R which can be used as a monitor output. The **AES pair 9/10** is available on the **RJ45 Connector** labeled **A-bot** on the DCMB and can be connected to the Booth monitor via a **D/A Converter.**

Table 21

* Refer to the ‘GDC AIB-2000 User Manual’ for more details.

IMPORTANT: Please check and set the levels of the analog input sources to the AIB-2000 appropriately, to avoid any damage to the auditorium speakers.

9.6. Technical Specifications of AIB-2000 Audio IO Box
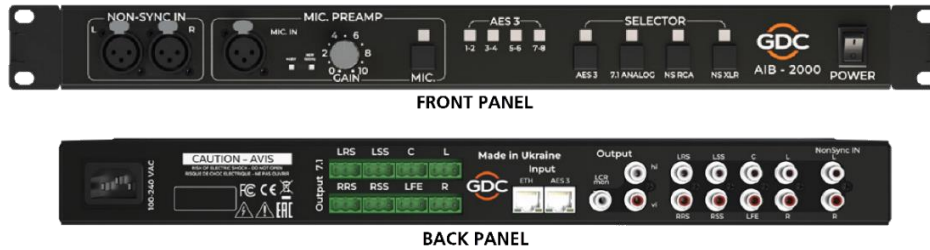
Figure 65: AIB-2000 Front and Back Panel

Performance	Dynamic range > 105dB
Frequency range	20 Hz - 20000 Hz
Microphone input	XLR female
Microphone switch	Microphone in ON/OFF
Microphone input HPF	100 Hz 12dB/ octave switchable
Microphone input phantom supply	+48 V switchable
Microphone input maximum gain	+60 dB
Non-Sync input	2 x XLR female front 2 x RCA rear
Analog unbalanced 7.1 input	8 x RCA
Analog H/I output[1]	1 x RCA
Analog V/I output[2]	1 x RCA
Monitoring output L+C+R summed[3]	1 x RCA
Analog balanced output	8 x 3 pin Phoenix
AES3 input	1 x RJ-45
Ethernet input	1 x RJ-45
Input selector	NS XLR / NS RCA / 7.1 Analog / AES3
Mains plug	C14
Mains nominal voltage	90V - 265V /50 - 60Hz
Maximum power consumption	10W
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Maximum operating altitude	10,000 ft. (3,000 m) above sea level
Rack height	1U
Dimensions (WxHxD)	483 x 44 x 197 mm / 19" x 1.73" x 7.75"
Net weight	2.6 kg
Shipping Dimensions (WxHxD)	533 x 266 x 76 mm
Shipping weight	3.7 kg

Table 22

[1]Analog H/I output shares the same channel with AES3 7.
[2]Analog V/I output shares the same channel with AES3
[3]When using GDC and Espedeo products, L+R+C monitor is available for DCP or HDMI PCM source

10. Optical Correction

10.1. Lens Back Focus Adjustment

Step 1: Turn the screen image to the maximum (adjusted by the **ZOOM +** button) and observe the clarity of the grid in the middle of the screen. If it is not clear, adjust the front focus (adjusted by the **Focus +/-** buttons) to make the line pairs in the center of the screen clear.

Step 2: Adjust the picture to the minimum (through the **ZOOM -** button) and observe the clarity of the grid in the middle of the picture. There are two situations at this time:

- The clarity of the picture center line pair is consistent with that of the picture at its maximum, proceed to **Step 3**.
- The center grid of the picture becomes blurred. At this time, take a piece of white paper and judge whether the clear surface of the center grid is in front of the screen or behind the screen. If it is in front of the screen, loosen the corresponding three screws in the lens bracket (increase the back focus). If it is behind the screen, tighten the corresponding three screws in the lens bracket (decrease the back focus), then adjust the picture to the maximum and repeat **Step 1**.
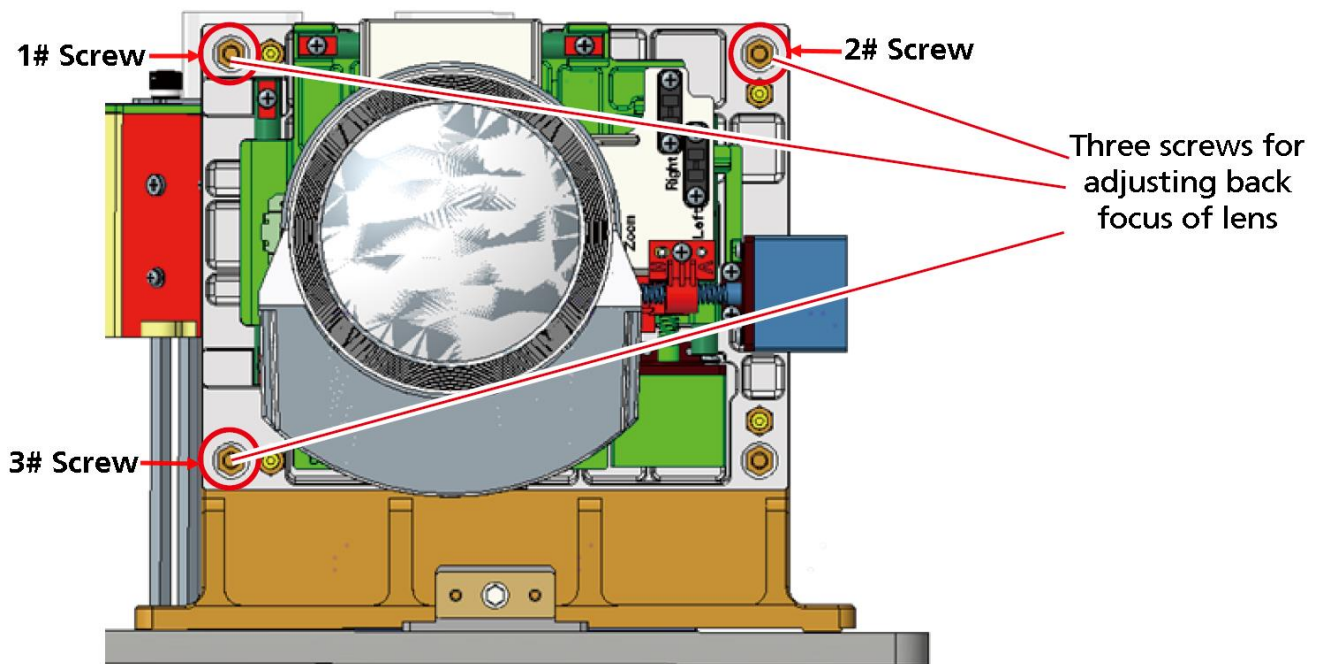
Figure 66: Lens back focus adjustment

Step 3: Observe the clarity of different areas of the picture. If the clarity of the whole picture is consistent, there is no need to adjust the back focus. If the picture has up and down pitching, adjust by adjusting **1# and 2# screws** at the same time or adjusting **3# screw** separately. If there is left-right pitching, adjust it by adjusting **1# and 3# screw** or adjusting **2# screw** separately until the global picture is clear.

Example:

- When there is left-right pitching, keep the center grid pattern clear and then judge whether the left/right clear surface is in front of the screen or behind the screen. If the left clear surface is in front of the screen, loosen the **2# screw** or tighten **1# and 3# screw**. If it is behind the screen, tighten the **2# screw** or loosen **1# and 3# screw**.

- When there is up and down pitching, keep the center grid pattern clear and then judge whether the upper/lower clear surface is in front of or behind the screen. If the upper clear surface is in front of the screen, tighten the **3# screw** or loosen **1# and 2 # screw**. If it is behind the screen, loosen the **3# screw** or loosen **1# and 2 # screw**.

⚠ **NOTE:**

When the picture is the largest; only the front focus can be adjusted. Whereas, when the picture is the smallest; only the rear focus can be adjusted;

When the three screws of the lens bracket need to be adjusted together (when adjusting the rear focus), please try to ensure the adjustment amplitude of the three screws is consistent. When adjusting the up and down pitching and left-right pitching, do not overdo it.

Step 4: Open a DCI Standard test pattern and create a new Lens file:

- From the **Administrator Settings** screen of the Supra Command Center web interface; click on the **Select Lens** option. Select the correct lens model from the 'Lens:' drop-down and click the **Startup** button. Refer to **Figure 67**.
- To perform a quick preliminary focus; first focus on the center of the image and then adjust the image to the center position within the lens range (it is best to use a full White test pattern at this time).
- Check the left and right horizontal degree, while projecting the test pattern image on the screen. Check the horizontal degree of the projector again to make the image edge parallel to the screen edge (for domestic installation, the lower edge of the screen is usually used as the reference standard). Refer to **Figure 68**.
- From the **Install** screen, go to **Lens File Settings** and click on **+New Lens File**. For adjusting the offset and focus, select the DCI standard test pattern image. Click the **Lens Shift Up/Down/Left/Right** buttons to adjust the offset and click the **Lens Focus Up/Down** buttons to make the image focus clear. Provide a name to the new Lens File and click on **Save**. Refer to **Figure 69**.
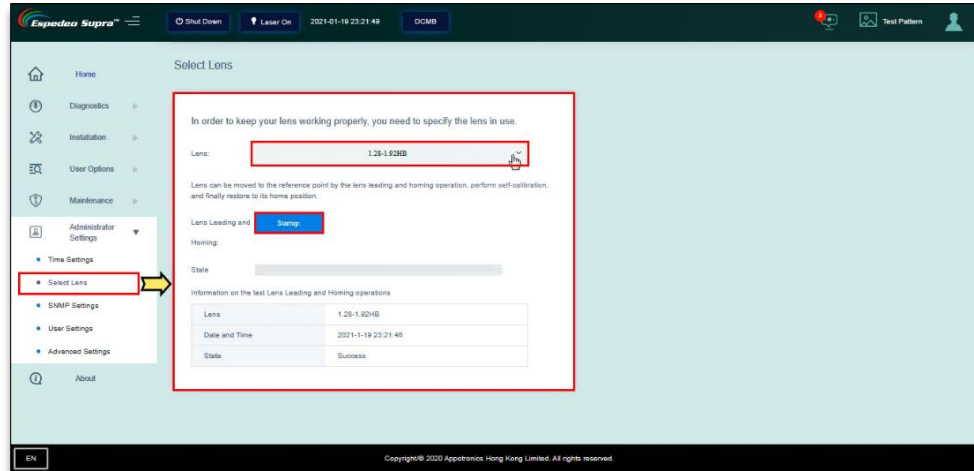
Figure 67: Select Lens and perform Lens Homing
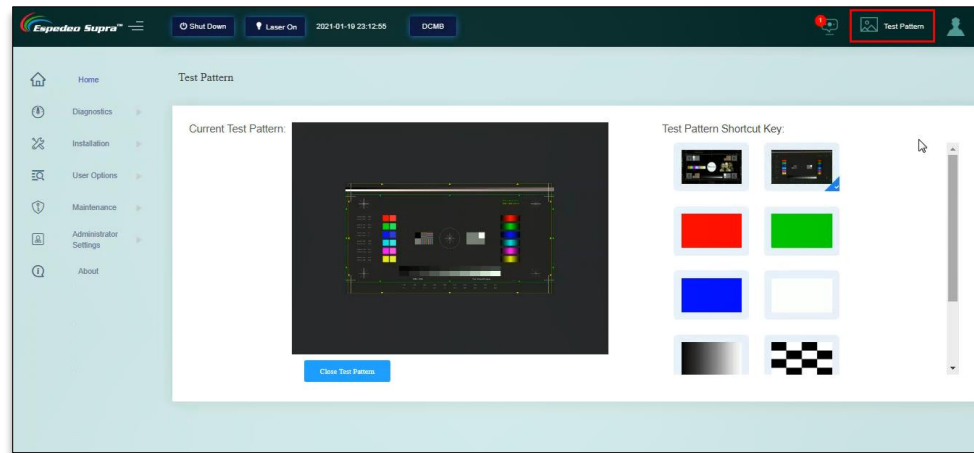
Figure 68: Project Test Pattern
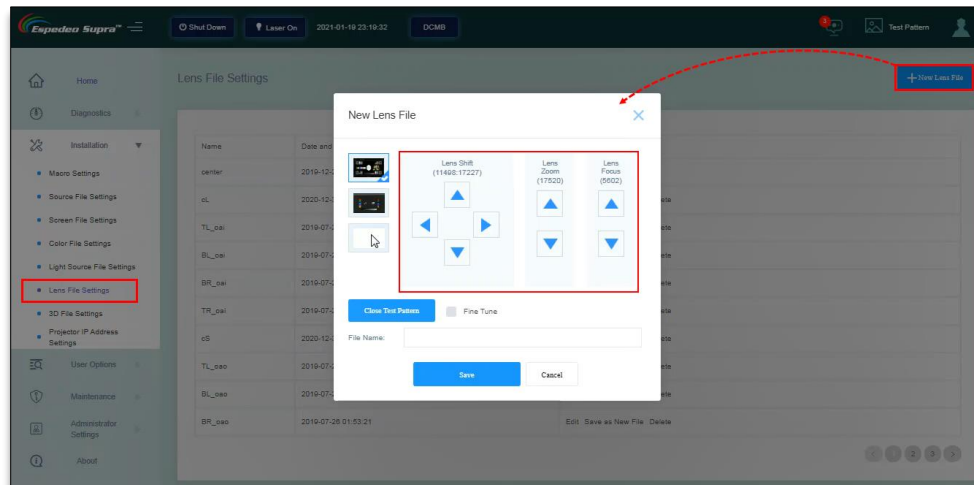
Figure 69: Create Lens file

10.2. DMD Convergence

When one or more kinds of projected colors (Red/Cyan) pass the appropriate convergence test pattern image inspection, the red/cyan grid lines should be able to accurately coincide. If they do not coincide, it indicates that there is a convergence problem. The adjustment steps are as follows:

Step 1: Remove the Top Cover of the projector to expose the internal light engine and the convergence adjusting mechanism present on the light engine.
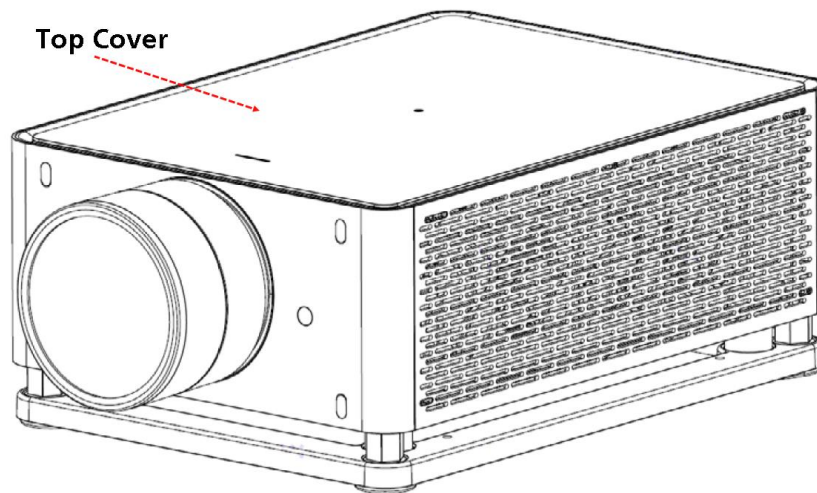
Figure 70: Remove Top Cover

Step 2: The convergence adjusting mechanism of the light machine is indicated by the Red circle in **Figure 71**. It can be adjusted by using the M3 Straight screwdriver.
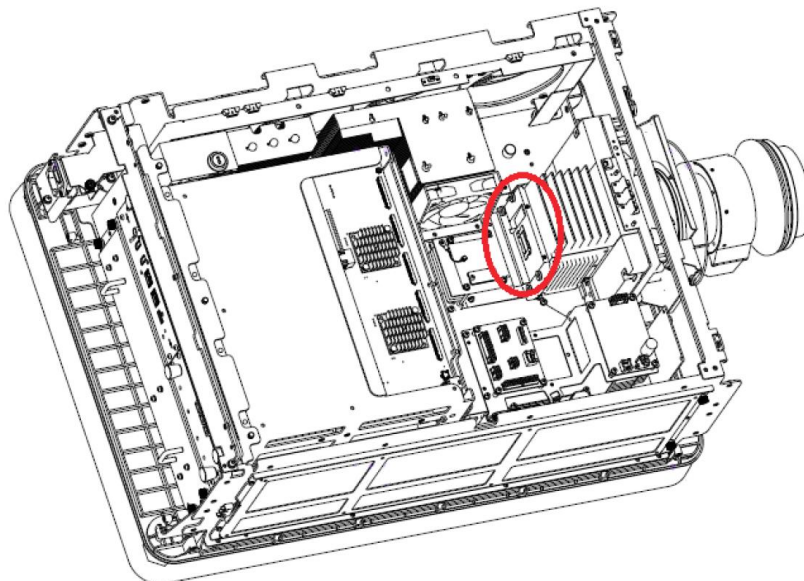
Figure 71: DMD Convergence adjusting mechanism

Step 3: With reference to **Figure 72**; for up-down and rotation adjustment, the **A** or **B** knob screw is adjusted separately for rotation. **A** and **B** knob screws are adjusted at the same time for up-down adjustment and the **C** knob screw is adjusted for left-right adjustment.
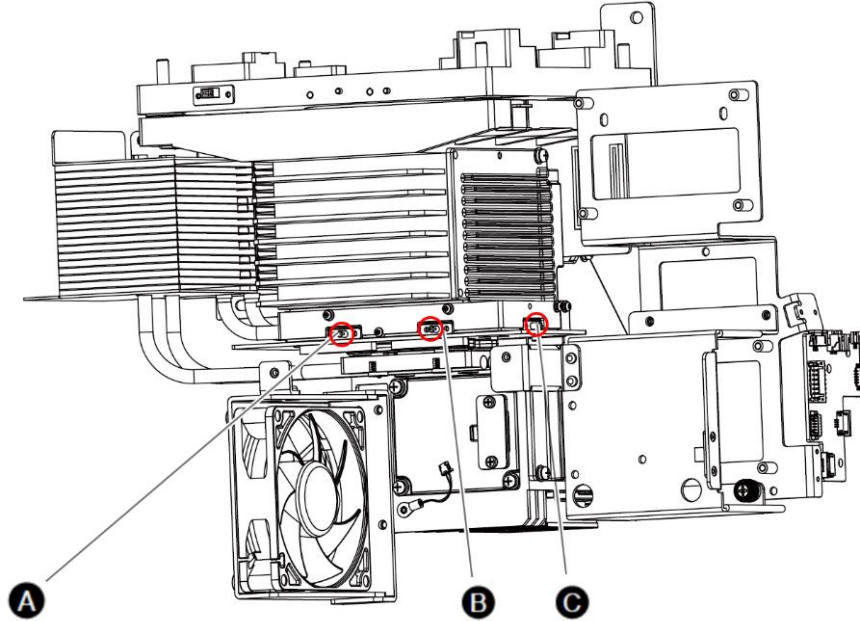
Figure 72: Locate A, B and C knob screws

Step 4: Project a grid test pattern. When the Red grid and the Cyan grid do not coincide, adjust the knob screws **A**, **B** or **C** to adjust up/down, rotate and left/right.

⚠ **NOTE:**
Please observe caution while adjusting the DMD convergence screws by observing the relative shift between the Red grid and Cyan grid on-screen.

⚠ **NOTE:**
If the benchmark is Cyan grid graph, only Red grid graph can be adjusted.

CASE 1 (as shown in **Figure 73**):

The Red grid graph is at the top left of the Cyan grid graph. At this time, the knob screw **C** should be adjusted counterclockwise to make the Red and Cyan grids overlap left and right and then the knobs screw **A** and **B** should be adjusted clockwise at the same time. Attention should be paid to the consistency of the adjustment range so that Red and Cyan grid patterns overlap up and down.

After the adjustment is completed, the pixel convergence should be < 0.5 pixels.
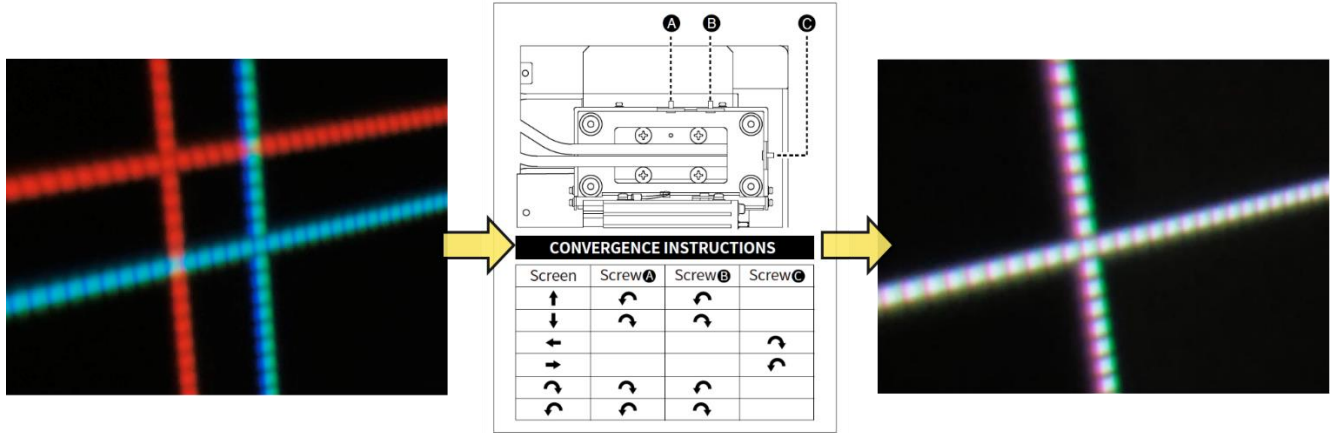
Figure 73: DMD Convergence example - Case 1

CASE 2 (as shown in **Figure 74**):

The Red grid graph is above the Cyan grid graph and the pixel convergence effect in the left and right directions is good. At this time, the knobs screw **A** and **B** should be adjusted clockwise at the same time. Attention should be paid to the consistency of the adjustment range so that Red and Cyan grid patterns overlap up and down.

After the adjustment is completed, the pixel convergence is < 0.5 pixel.
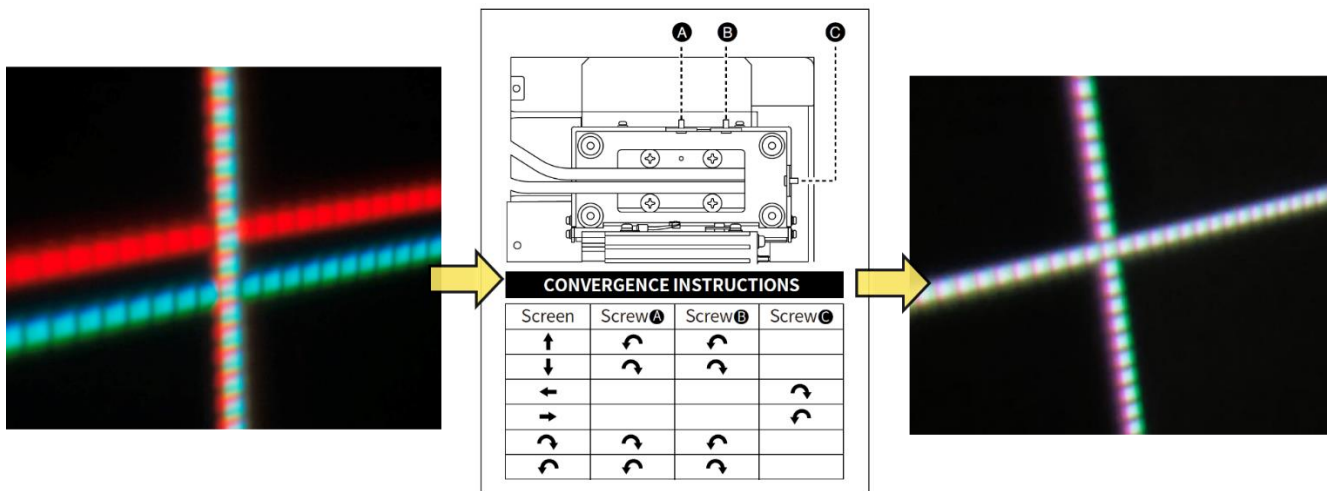
Figure 74: DMD Convergence example - Case 2

11. Espedeo VM-1140 VESA Ceiling Mount

11.1. Introduction

The **Espedeo VM-1140** is a VESA Ceiling Mount designed for in-auditorium or in-home installation of the Espedeo Supra-5000 projector, making it an ideal solution for boothless mini-theatres, small auditoriums and private cinema installations.

The VM-1140 is robust, easy to install and allows angular adjustments in three directions, which makes it easy to fit and position the Supra-5000 projector. The mount is adjustable in height from 240mm (9.45 inches) to 1140mm (44.88 inches). The rotation angle adjustment range is +/- 20 degrees. There is also the possibility of adding trusses and adjusting the tilt of the projector along the vertical axis: +/- 25 degrees and horizontal axis: +/- 15 degrees.

The VM-1140 is robust and capable of carrying a projector with a weight of up to 150 kg / 330 lbs. It can either be used to install the Supra-5000 projector from the ceiling or fasten it to a truss using truss mounting clamps. With both mounting methods, additional safety is provided by securing the equipment with the included safety cable to prevent the equipment from falling during or after setup when used in accordance with safety instructions.
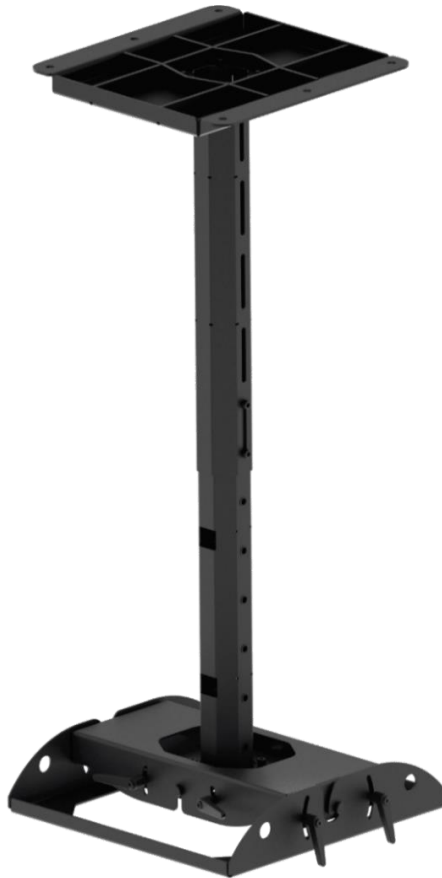
Figure 75: Espedeo VM-1140 Ceiling Mount

11.2. Dimensions
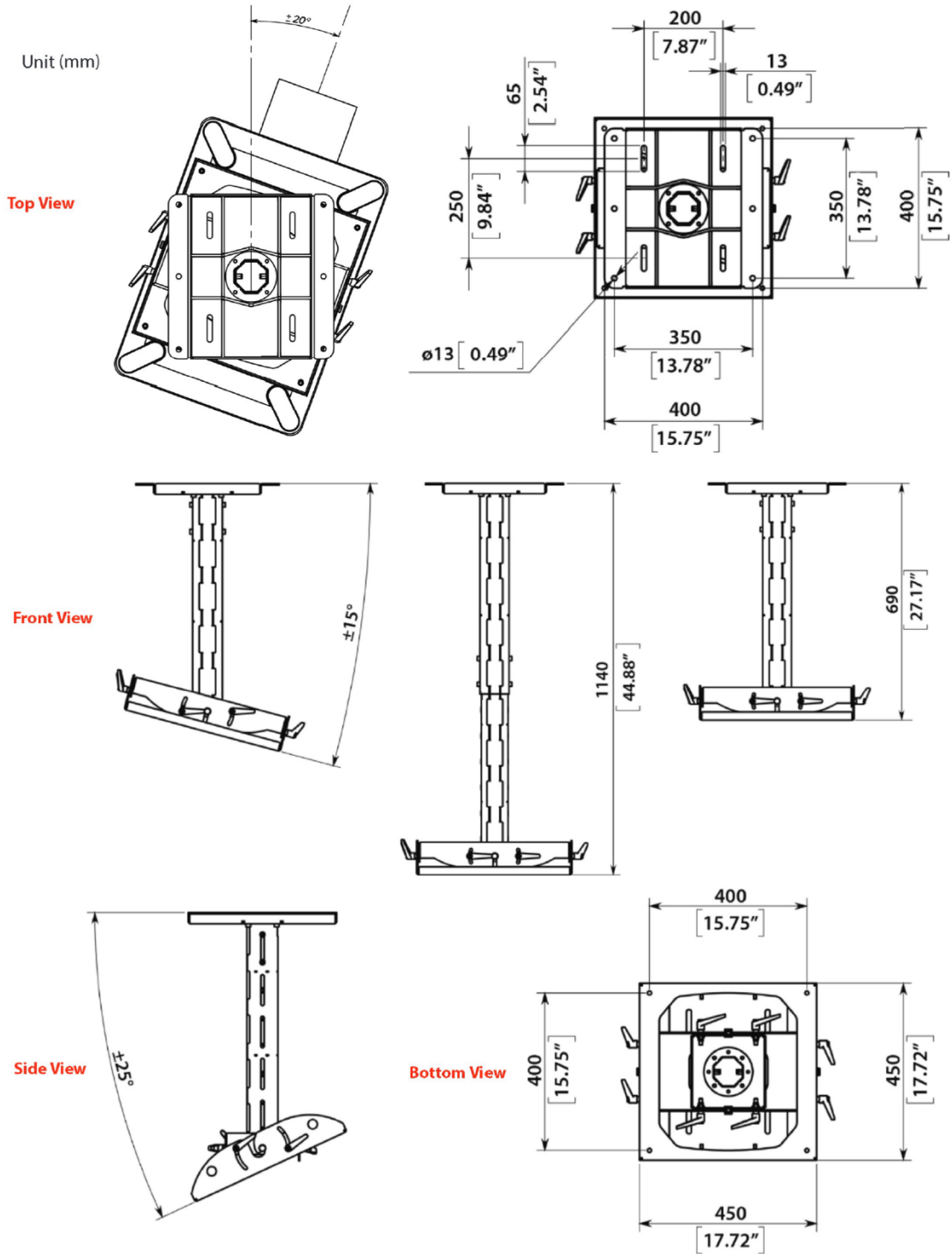
Figure 76: VM-1140 Dimensions

11.3. Packing List

Sr. No.	Part Description	Quantity	Image
①	**Ceiling Plate**	1 PCS.	
②	**Upper Tube**	1 PCS.	
③	**Lower Tube**	1 PCS.	
④	**Top Plate**	1 PCS.	
⑤	**Middle plate**	1 PCS.	

⑥	**Projector Plate**	1 PCS.	
⑦	**Safety Anchor**	1 PCS.	
⑧	**Bolt** **(M8x20 DIN912)**	12 PCS.	
⑨	**Clamping Handle**	8 PCS.	
⑩	**Projector Mounting Kit** **(Bolt M8x50 DIN912, Nut M8,** **Washer, Split Lock)**	4 PCS. in 1 Set	
⑪	**Anchor Bolt** **(10x60/M8)**	10 PCS.	
⑫	**Safety Cable with** **2 PCS of Quick Links**	1 PCS.	
⑬	**Hex key 6**	1 PCS.	

⑭	**Truss Clamp Kit: Hook-140 (optional)**	4 PCS.	

Table 23

The parts ① to ⑪ of the VM-1140 Ceiling Mount kit which are listed under

Table 23, have been illustrated in **Figure 77** below. The remaining parts ⑫ to ⑭ have been illustrated separately in **Step 3B** and **Step 13** under **Section 11.5**.
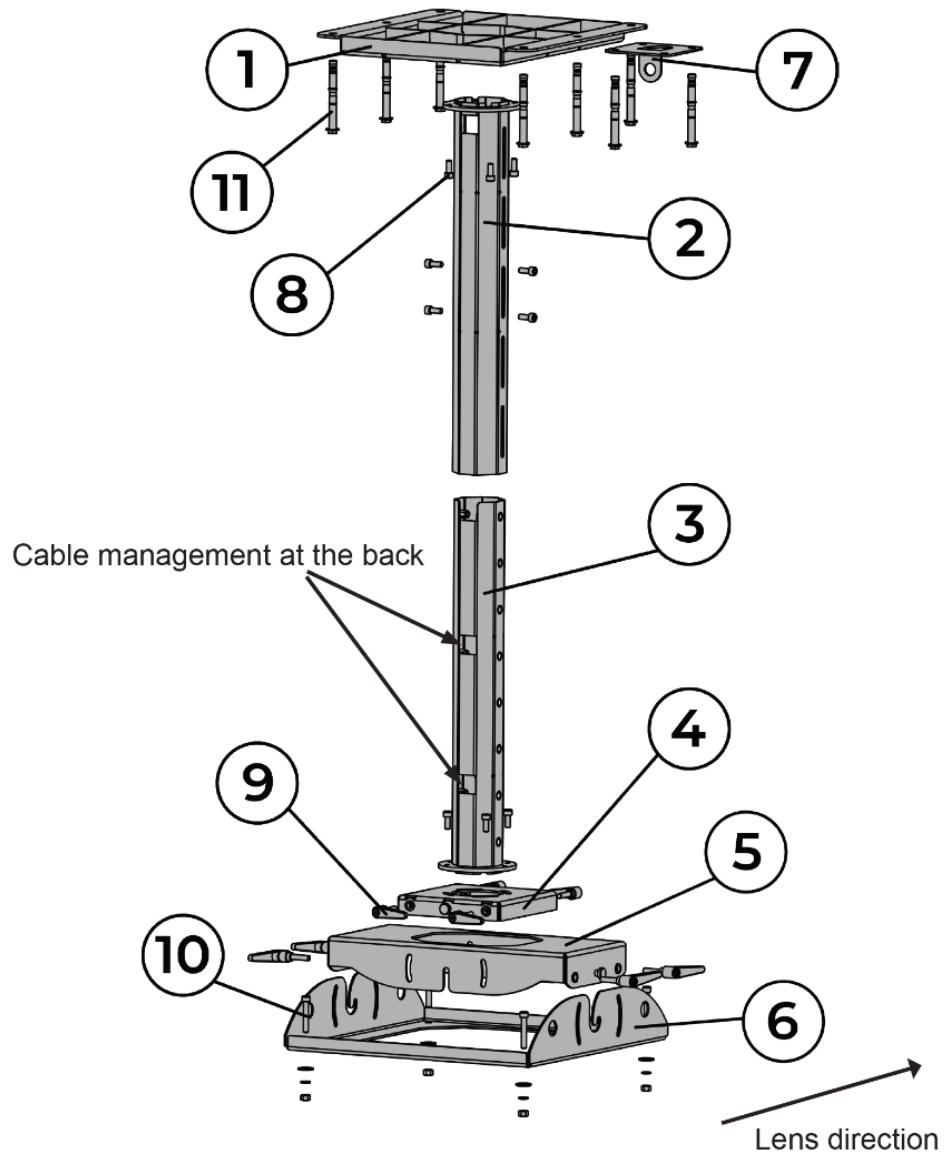
Figure 77: VM-1140 Parts

11.4. Safety Instructions

<div style="border: 2px solid red;">

⚠ **WARNING:**

- **An experienced professional installer is required to install the mount to a ceiling or truss and the projector. The safety and assembly instructions provided in this manual must be strictly followed. An improperly installed mount may result in property damage, serious personal injury and/or liability for the installing contractor. Product must be used as intended pursuant to the safety and assembly instructions. Use of the product by a user is at the user's risk.**

- **Always use safety cables! This will prevent equipment from falling during/after setup and while in use.**

- **Always check if the ceiling or truss is structurally strong enough to support the load. An experienced professional is required to determine if the ceiling or truss structure is strong enough to hold the weight of both the projector and VM-1140 including its brackets.**

- **Only use fasteners and clamps.**

- **Always make sure to securely use and tighten/lock all mounting bolts provided. Loose bolts may become unscrewed over time due to vibration which could potentially create a safety hazard when not tightened securely. User should inspect the bolts on a regular basis to ensure all bolts are secure.**

</div>

11.5. Assembly and Installation

The steps mentioned below explain how to assemble and mount the VM-1140 to a ceiling or truss as well as how to attach and secure the Supra-5000 projector to it. The numbers (① to ⑭) mentioned in these steps refer to the parts listed under

Table 23.

Step 1: Start the assembly of the VM-1140 ceiling mount by sliding the upper tube ② over the ceiling plate ①, as shown in **Figure 78**.
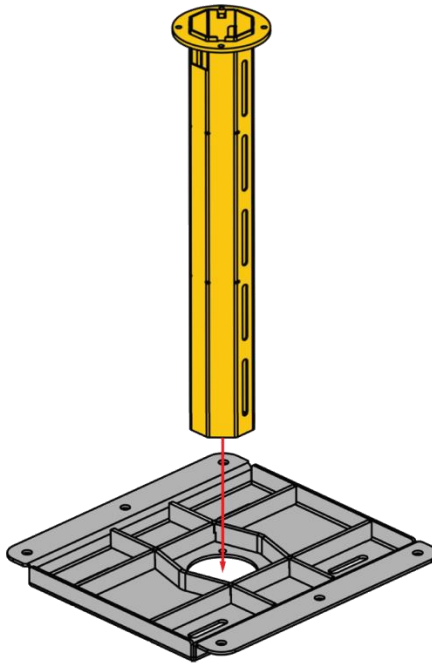

Figure 78: Step 1

Step 2: Attach the upper tube ② to the ceiling plate ① with bolts ④ (4 pcs.), as shown in **Figure 79.**
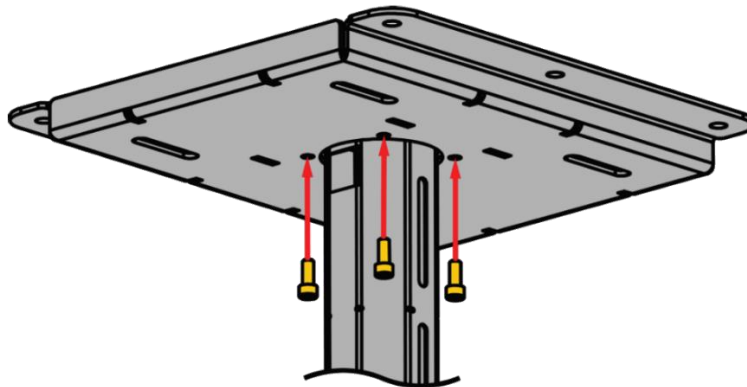
Figure 79**: Step 2**

Step 3:

3A] For concrete ceiling mount:

1. Fasten the ceiling plate ① with upper tube ② by using the anchor bolts ⑪ (6 pcs.), as shown in **Figure 80**.
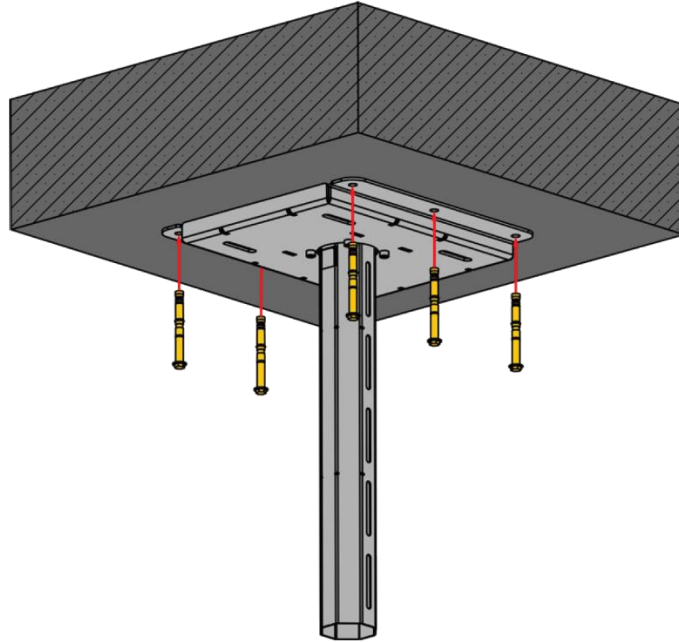
Figure 80: Step 3A-1

2. Fasten the safety anchor ⑦ near the ceiling plate ① by using the anchor bolts ⑪ (4 pcs.), as shown in **Figure 81**.
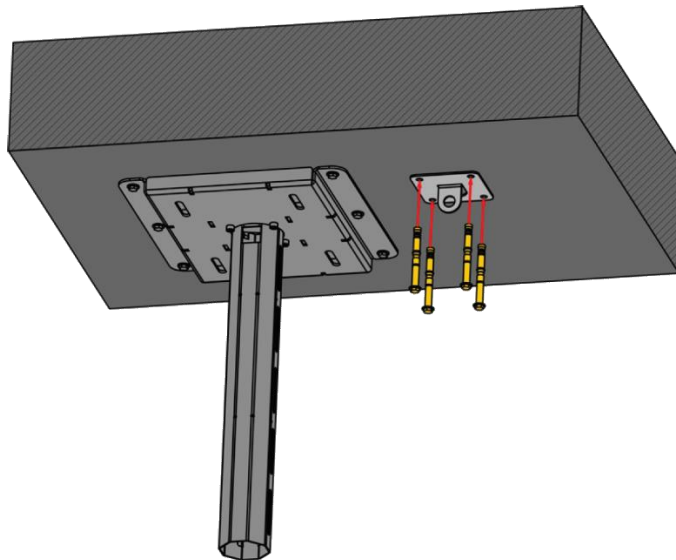
Figure 81: Step 3A-2

3B] For truss mount:

1. [Optional] For fastening the VM-1140 to a truss, use the truss clamp kit hook ⑭. First, fasten the truss clamps to the ceiling plate ① without tightening the nuts, as shown in **Figure 82**.
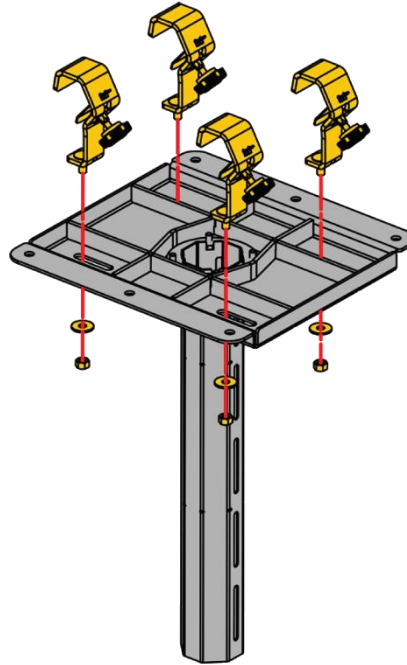
Figure 82: Step 3B-1

2. Hook the truss clamps to the truss structure, as shown in **Figure 83**.
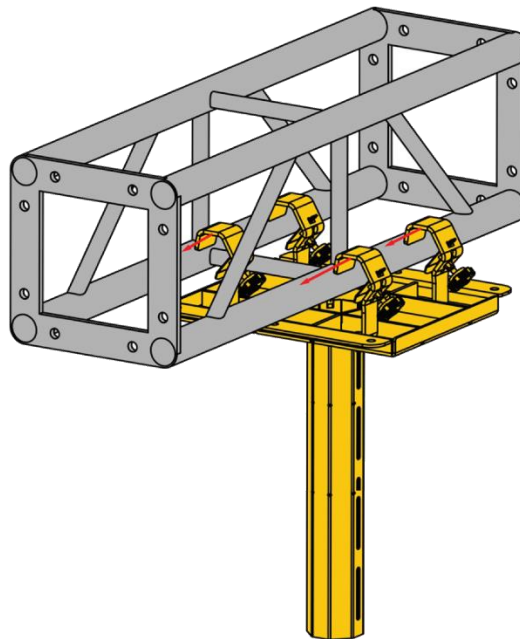
Figure 83: Step 3B-2

3. Align the ceiling plate ① in the desired position on the truss and then tighten the nuts and screws of the truss clamps ⑭, as shown in **Figure 84**.
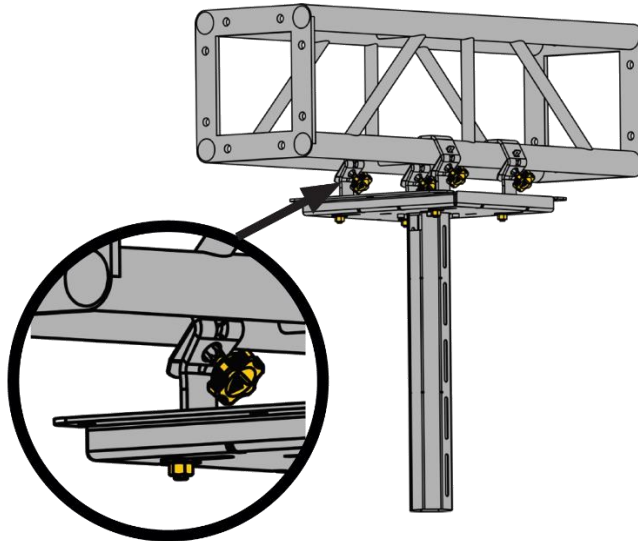
Figure 84: Step 3B-3

Step 4: Slide the top plate ④ over the lower tube ③, as shown in **Figure 85**.
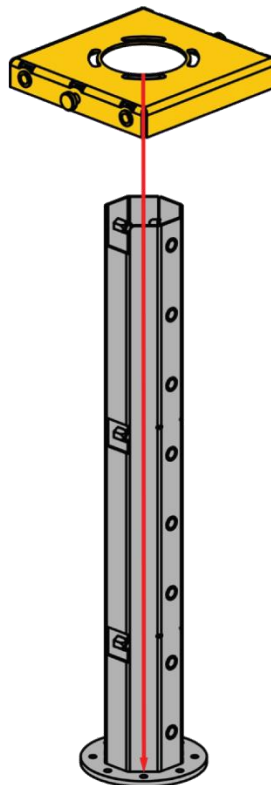
Figure 85: Step 4

Step 5: Tighten the top plate ④ to the lower tube ③ using the bolts ⑧ (4 pcs.), as shown in **Figure 86**.
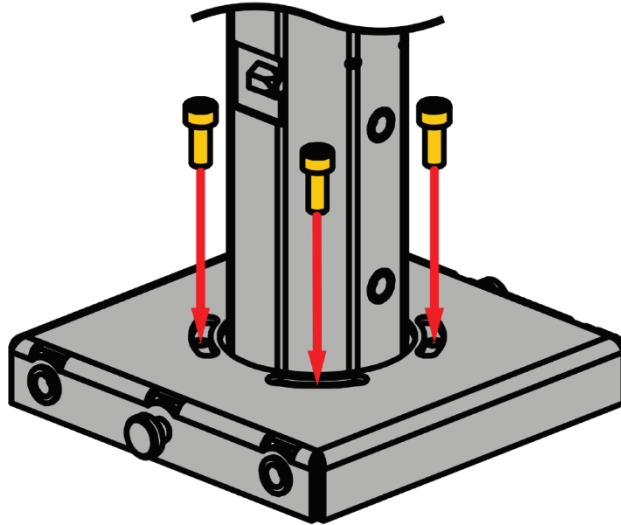
Figure 86: Step 5

Step 6: Slide the middle plate ⑤ over the lower tube ③ and top plate ④, as shown in **Figure 87**.
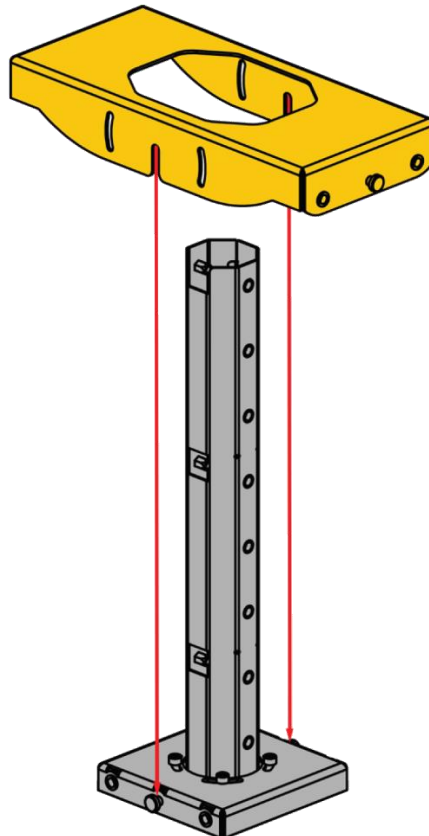
Figure 87: Step 6

Step 7: Tighten the middle plate ⑤ to the top plate ④ with the help of the clamping handles ⑨ (4 pcs.), as shown in **Figure 88**.
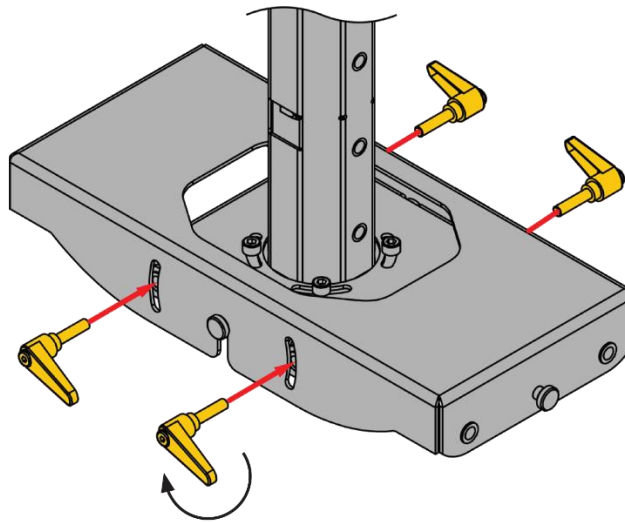

Figure 88: Step 7

Step 8: Insert the lower tube ③ into the upper tube ②. Please note that for correct alignment/installation of the upper and lower tubes, the rectangular holes must match, as shown in **Figure 89**.
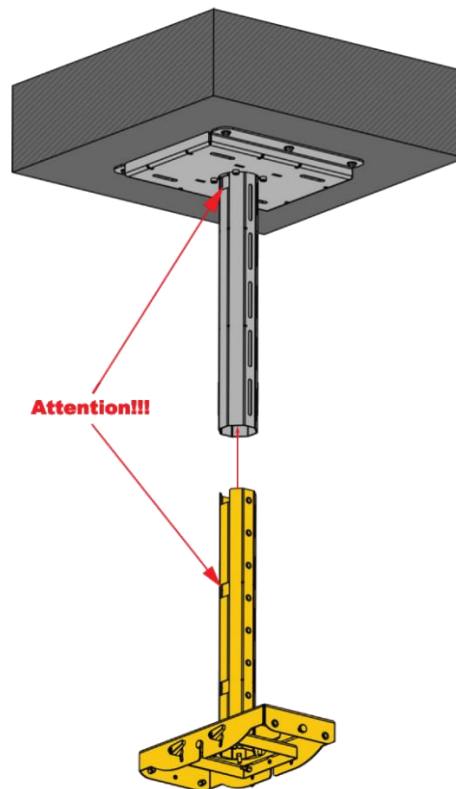

Figure 89: Step 8

Step 9: Tighten the lower tube ③ to the upper tube ② by using the bolts ⑧ (4 pcs.) at the desired height/drop, as shown in **Figure 90**.
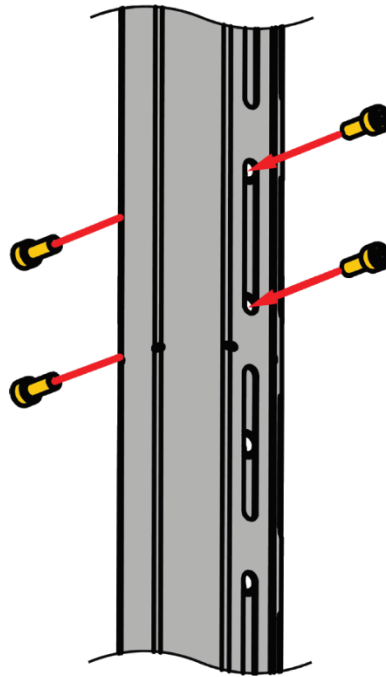

Figure 90: Step 9

Step 10: Attach the projector plate ⑥ to the Supra-5000 projector using the projector mounting kit ⑩ (4pcs.), as shown in **Figure 91**.
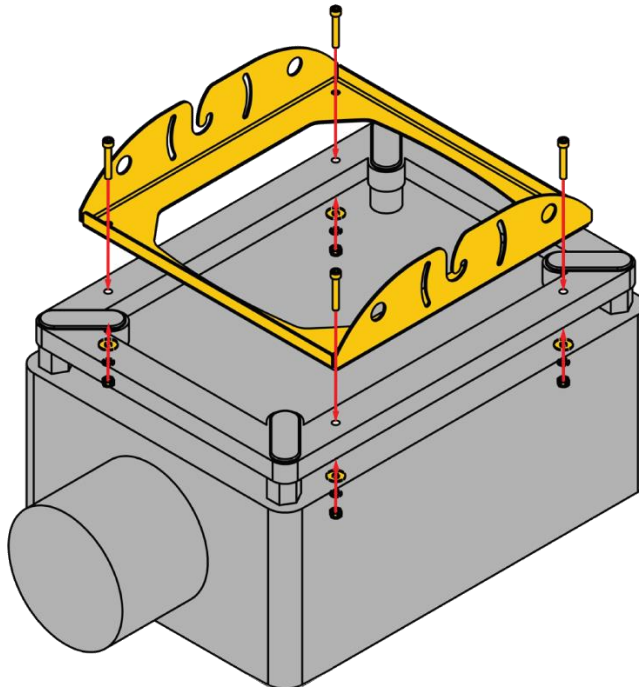

Figure 91: Step 10

Step 11: Attach the projector plate ⑥ and projector to the middle plate ⑤, as shown in **Figure 92**.
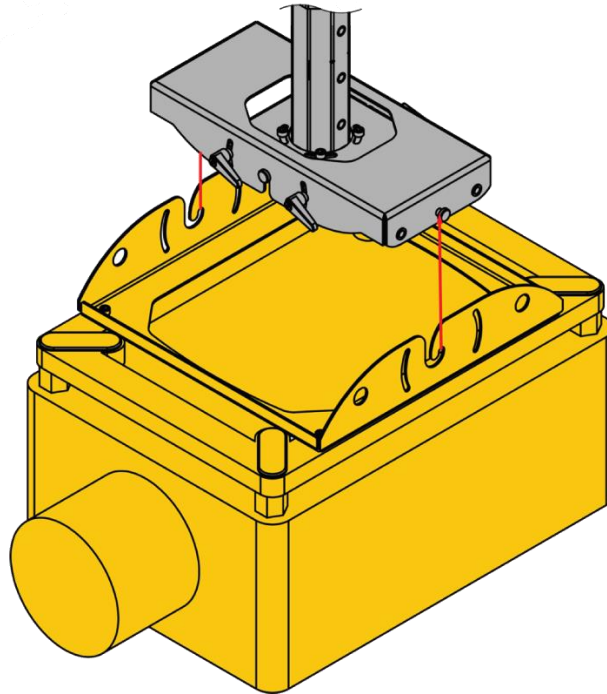

Figure 92: Step 11

Step 12: Tighten the projector plate ⑥ to the middle plate ⑤ by using the clamping handles ⑨ (4 pcs.), as shown in **Figure 93**.
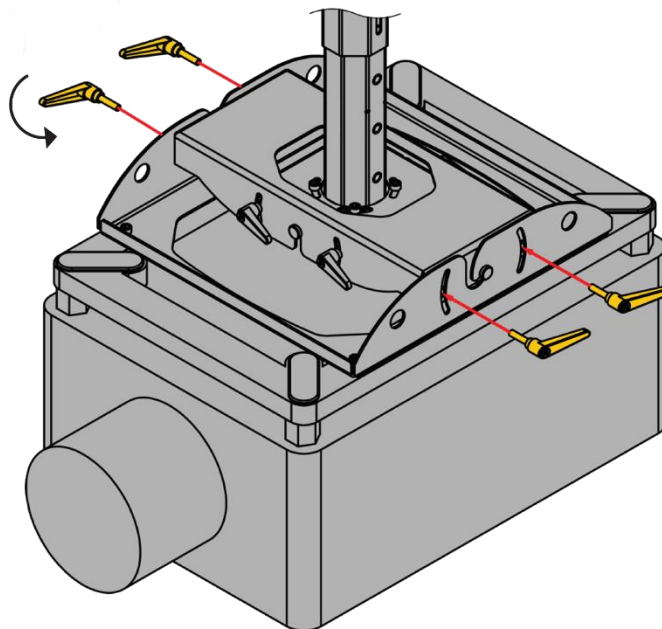

Figure 93: Step 12

Step 13:

13A] For concrete ceiling mount: Use a quick link to secure one end of the safety cable ⑫ to the safety anchor ⑦. Conduit the other end of the safety cable ⑫ into the upper tube ② and lower tube ③, as shown in **Figure 94**.
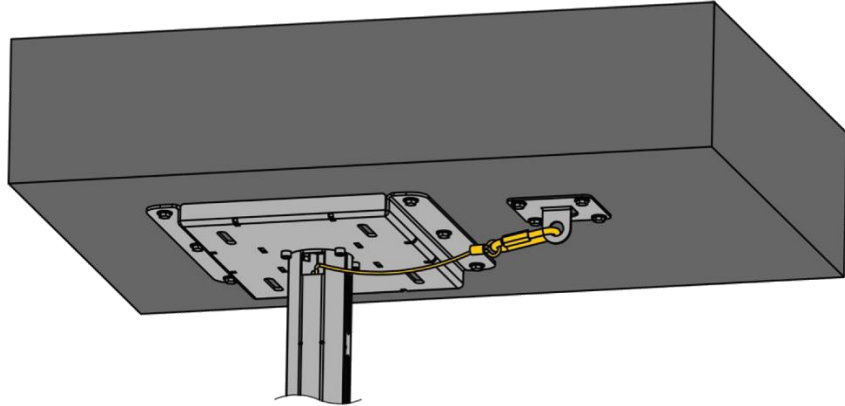

Figure 94: Step 13A

13B] For truss mount: Use a quick link to secure one end of the safety cable ⑫ around the truss. Conduit the other end of the safety cable ⑫ into the upper tube ② and lower tube ③, as shown in **Figure 95**.
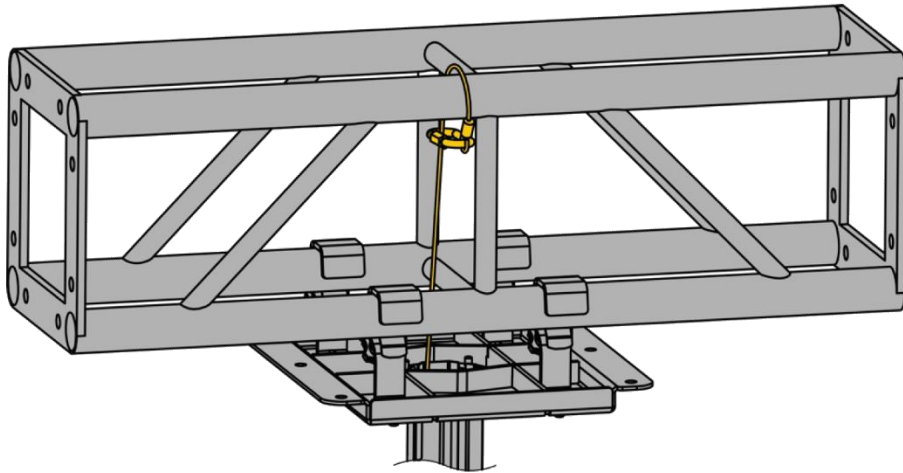

Figure 95: Step 13B

Step 14: Attach the other end of the safety cable ⑫ to the projector plate ⑥ using a quick link, as shown in **Figure 96**.
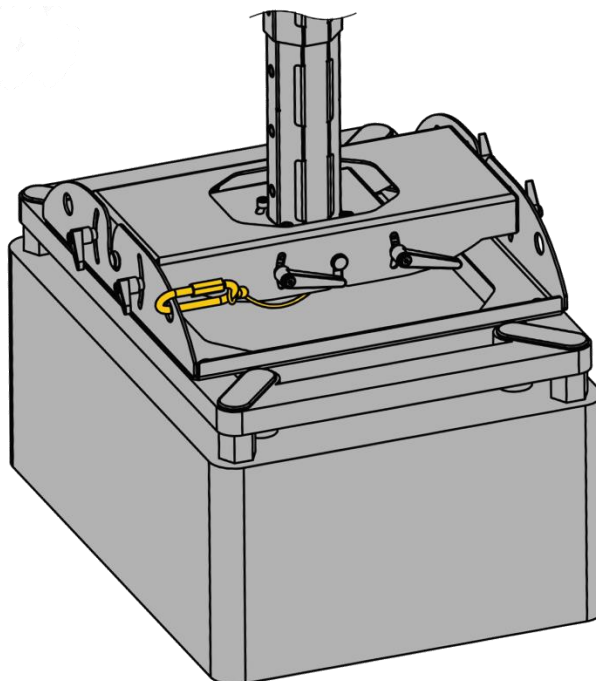

Figure 96: Step 14

11.5.1. Height Adjustment

- The base length of the upper tube ② and lower tube ③ allows for height adjustability:
  <u>Minimum: 690mm</u> (21.17 inches) to <u>Maximum: 1140 mm</u> (44.88 inches).
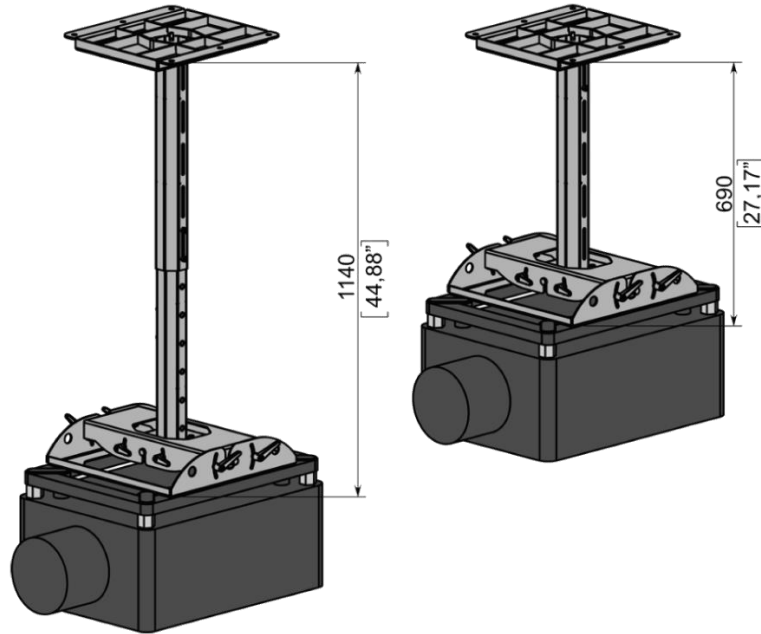

Figure 97: Max. and Min. height without cut

- In case a lower height/drop is required, simply cut the upper tube ② and lower tube ③ along the two lines: **Cut Line A** and **Cut Line B** (refer to **Figure 98**).
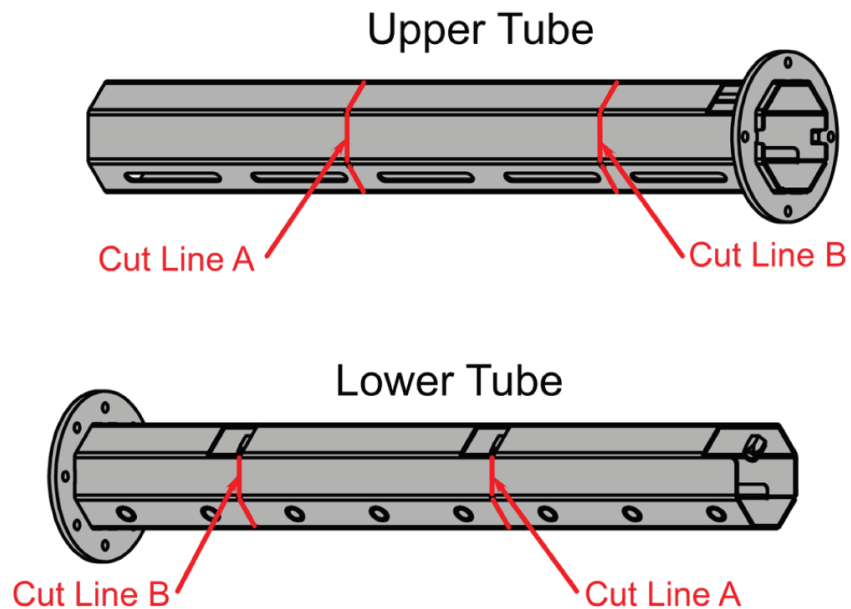

Figure 98: Cut lines for Upper and Lower Tube

- When cutting the upper tube ② and lower tube ③ along **Cut Line A**, you can adjust the height from <u>Minimum: 465mm</u> (8.31 inches) to <u>Maximum: 690mm</u> (27.17 inches).
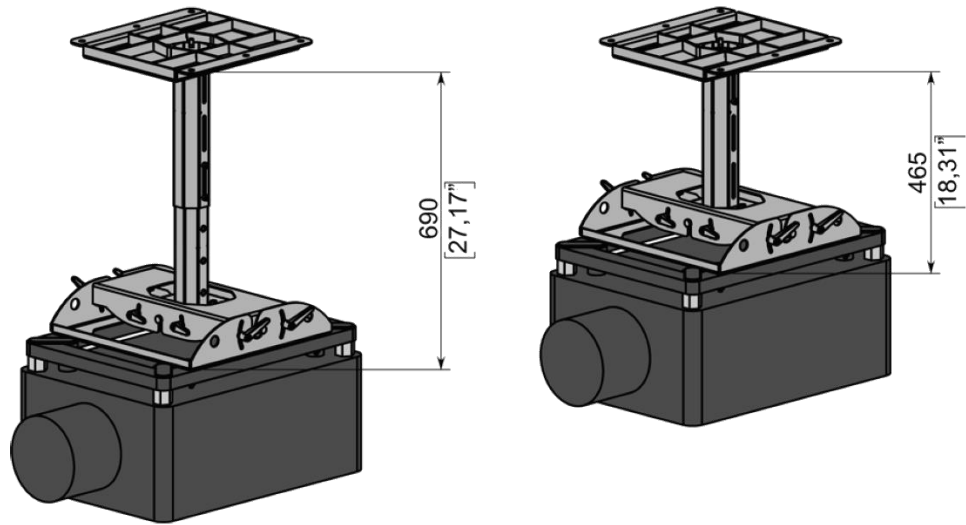

Figure 99: Max. and Min. height with Cut Line A

- When cutting the upper tube ② and lower tube ③ along **Cut Line B**, you can achieve the smallest height: <u>240mm</u> (9.45 inches).
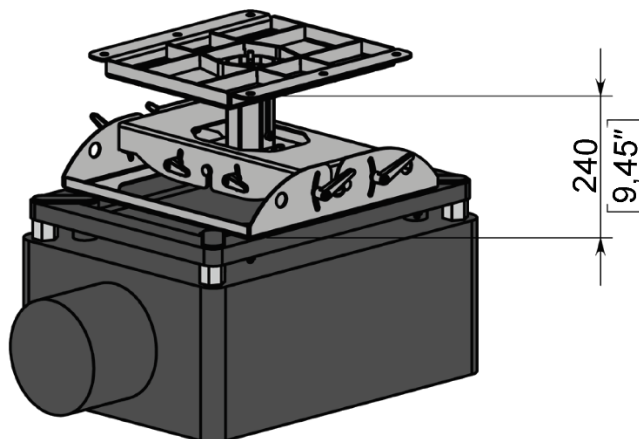

Figure 100: Min. height with Cut Line B

⚠ **NOTE:**
An alternative ceiling mount is the **VCTUB XL Universal Projector mount** (https://www.legrandav.com/products/mounts/projector-mounts/vctub-xl-universal-tool-free-projector-mount/vctub). The **VCTUB XL Universal Projector mount** can either be directly sourced from **Legrand®** or you can check with your local Espedeo supplier.

12. Testing Procedures after Installation

After the installation has been completed, it is necessary to test the following to ensure that the Supra-5000 Projector has been properly installed:

1. Test the video playback capabilities of the Supra-5000.
2. Test the audio playback capabilities of the Supra-5000 and verify that all the macros are working. Also, check for any static noises.
3. Test the DCMB's ability to activate automation cues using test cues for lights, curtains, sound and fire alarm.
4. Test the remote access capabilities of the DCMB, including Theater Management System (TMS) access and network connectivity

13. Maintenance

13.1. Preventive Maintenance Recommendations

The projector is designed with an overall dust-proof sealing which not only prolongs the lifetime of the projector's optical components and ensures long-term stability of optical performance indicators, but also reduces the daily maintenance and cleaning frequency of the Cinema. The fully sealed structure of the light path part eliminates the regular cleaning of the light-emitting surface of the ordinary projector. Because the lens is sealed by a glass cover, you only need to clean the dust on the glass cover.

It is also recommended to do a maintenance reboot of the projector on a <u>weekly</u> basis.

13.2. Filter Components and Maintenance Intervals

According to the dust-proof design, the filter adopts ultra-high-flow ESD air filter materials. The filter materials have an open channel structure and adopt ESD electret materials that are made of 100% synthetic fibers and have humidity-resistant and general chemical features. Additionally, the filter materials are anti-mildew. It is recommended to clean the filter <u>every three months</u> using dry air and replace the filter <u>every six months</u> or according to the actual site conditions.

⚠ **NOTE:**
Only trained projectionists or qualified maintenance personnel are allowed to perform routine maintenance operations on the Espedeo Supra-5000 projector.

14. Switching Off the Espedeo Supra-5000

To switch off the Espedeo Supra-5000 digital cinema and secured media projection system, please follow the power down sequence depicted in **Figure 101**:
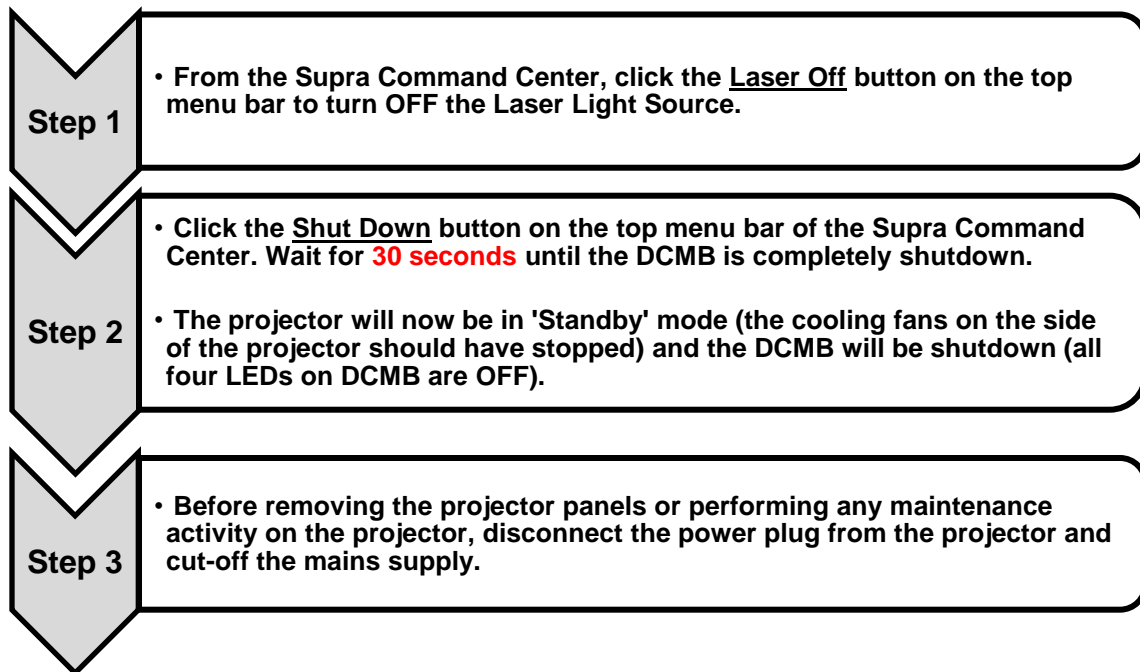
Step 1
- **From the Supra Command Center, click the <u>Laser Off</u> button on the top menu bar to turn OFF the Laser Light Source.**

Step 2
- **Click the <u>Shut Down</u> button on the top menu bar of the Supra Command Center. Wait for 30 seconds until the DCMB is completely shutdown.**
- **The projector will now be in 'Standby' mode (the cooling fans on the side of the projector should have stopped) and the DCMB will be shutdown (all four LEDs on DCMB are OFF).**

Step 3
- **Before removing the projector panels or performing any maintenance activity on the projector, disconnect the power plug from the projector and cut-off the mains supply.**

Figure 101: Supra-5000 Power Down sequence

Please Note: When the Supra-5000 is in 'Standby' mode, you can access the Supra Command Center web interface via the URL: http://PIBLAN1IP where "PIBLAN1" represents the **LAN 1** IP address of the PIB (refer to **Section 6.8** for more details regarding PIB **LAN 1** IP setup) and then click the **Power ON** button on the top menu bar to boot-up the DCMB.

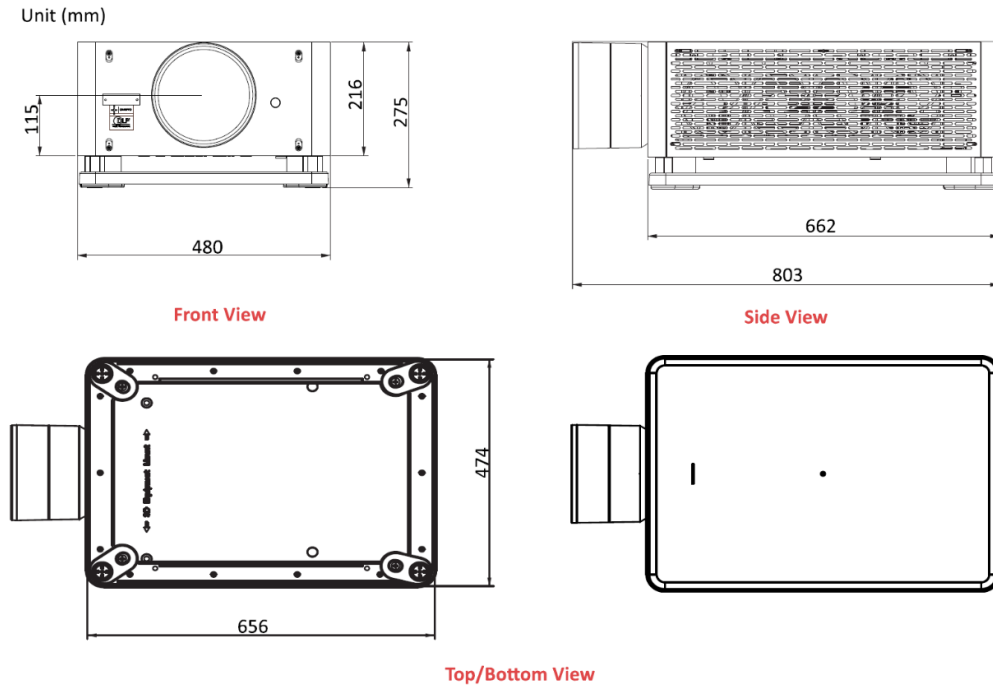# 15. Projector Specifications

15.1. Projector Dimensions

Figure 102: Projector Dimensions
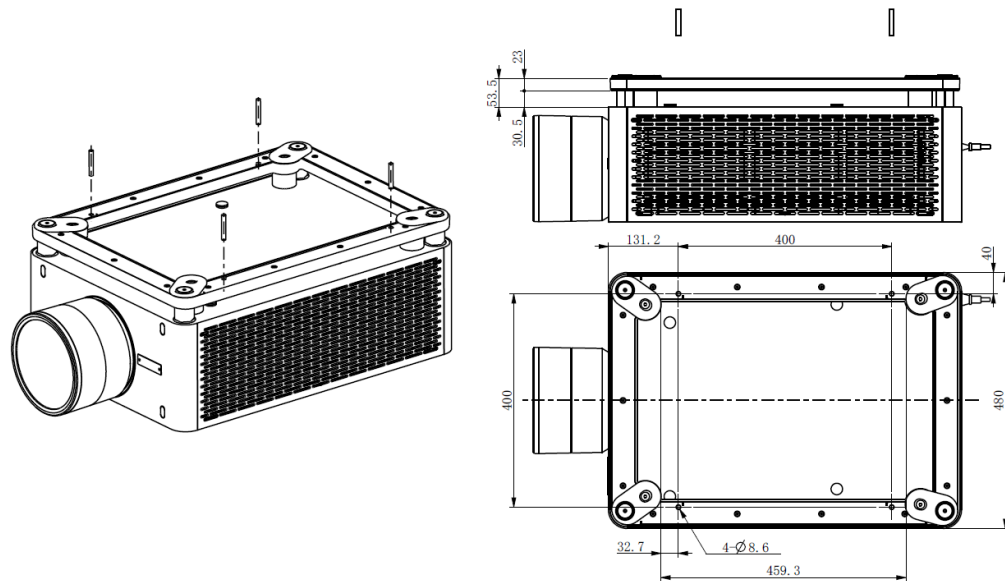
15.2. Projector Base Dimensions

Figure 103: Projector Base Dimensions

15.3. Certifications

Item	Compliance Standards and Requirements
DCI	DCSS/CTP
Laser safety	IEC60825-1:2014 (Class 1) ，IEC62471-5:2015 (RG2)
HDMI	HDMI 1.4b

Table 24

Espedeo Website

Contact Us

Technical Support

Worldwide Offices