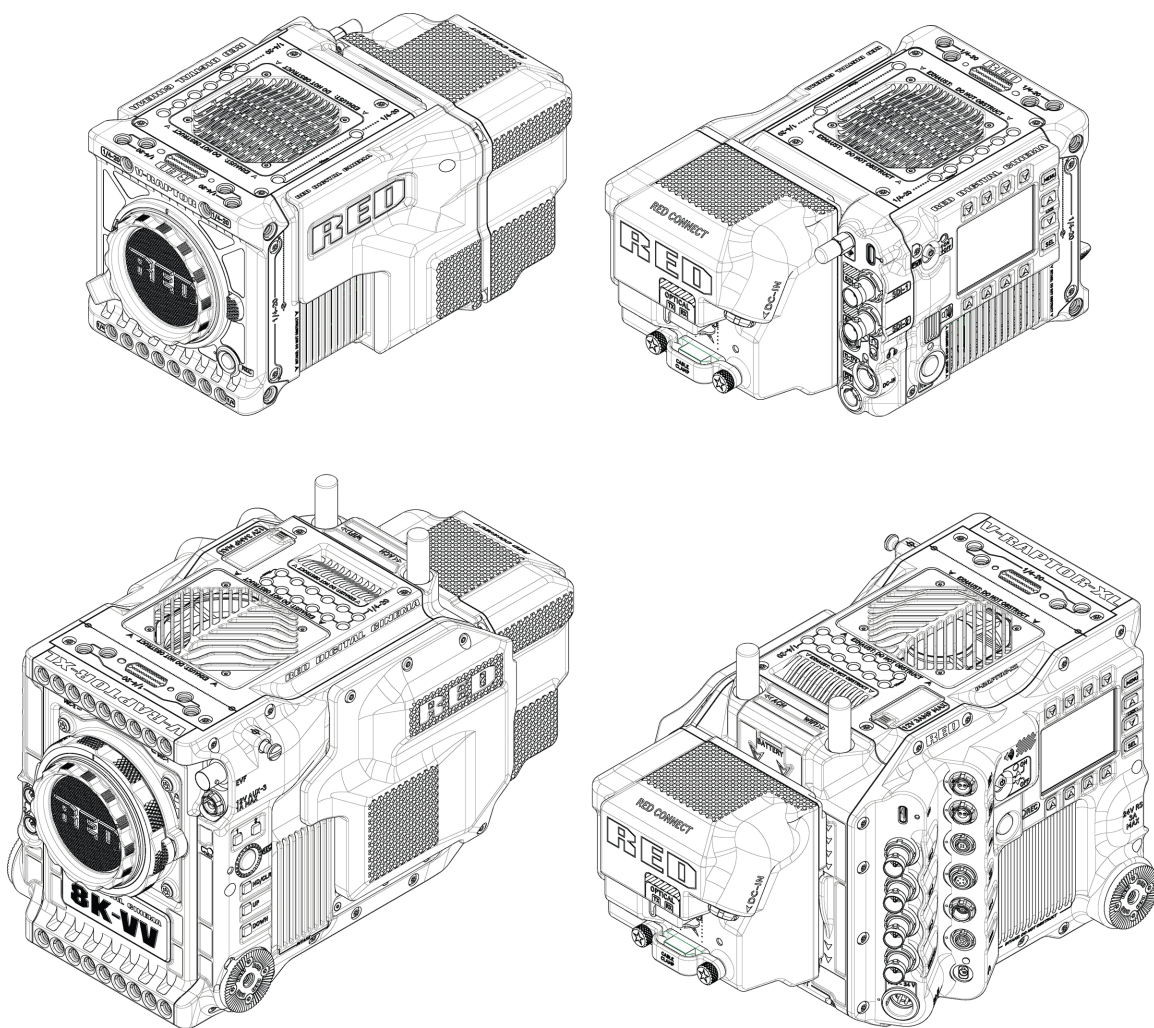




RED CONNECT MODULE OPERATION GUIDE



RED CONNECT MODULE | V1.0, REV. A

RED.COM

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COMPLIANCE STATEMENTS

INDUSTRIAL CANADA EMISSION COMPLIANCE STATEMENTS

This device complies with Industry Canada license-exempt RSS standards RSS 139 and RSS 210. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES-003. To comply with FCC and Industry Canada RF exposure limits for general population/ uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of 70 mm from all persons and operating in conjunction with any other antenna or

transmitter, except in accordance with FCC multi-transmitter product procedures.

Other user manual statements may apply.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Pour se conformer aux limites d'exposition aux RF de la FCC et d'industries Canada pour la population générale/ exposition non contrôlée, l'antenne(s) utilisée pour ce transmetteur doit être installée pour fournir une distance de séparation d'au moins 70 mm de toutes les personnes et fonctionnant conjointement avec une autre antenne ou émetteur, sauf en conformité avec les procédures de produits multi-émetteur FCC.

Autres d'éclarations manuel de l'utilisateur peuvent s'appliquer.

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENTS



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.

To maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

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.



CAUTION: Exposure to Radio Frequency Radiation.

The device shall be used in such a manner that the potential for human contact is minimized.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.



CAUTION: Regulations of the FCC and FAA prohibit airborne operation of radio-frequency wireless devices because their signals could interfere with critical aircraft instruments.



CAUTION: If the device is changed or modified without permission from RED, the user may void his or her authority to operate the equipment.

AUSTRALIA AND NEW ZEALAND STATEMENTS

RED declares that the radio equipment described in this document complies with the following international standards:

- IEC 62368-1 – Product Safety
- ETSI EN 300 328 – Technical requirement for radio equipment

RED declares digital devices described in this document comply with the following Australian and New Zealand standards:

- AS/NZS CISPR 32 – Electromagnetic Interference
- AS/NZS 61000.3.2 – Power Line Harmonics
- AS/NZS 61000.3.3 – Power Line Flicker

EUROPEAN UNION COMPLIANCE STATEMENTS



RED declares that the radio equipment described in this document complies with the EMC Directive (2014/30/EU) and the Low Voltage Directive (2014/35/EU) issued by the Commission of the European Community. Compliance with this directive implies

conformity to the following European Norms (in brackets are the equivalent international standards).

- EN 62368-1 (IEC 62368-1) – Product Safety
- ETSI EN 300 328 Technical requirement for radio equipment
- ETSI EN 301 489 General EMC requirements for radio equipment
- EN 55032 (CISPR 32) Electromagnetic Compatibility
- EN 55035 (CISPR 35) Immunity Requirements
- EN 61000-3-2 (IEC 61000-3-2) Harmonic Current Emissions
- EN 61000-3-3 (IEC 61000-3-3) Voltage changes, voltage fluctuations and flicker
- EU 2015/863 RoHS Directive

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)



The Waste Electrical and Electronic Equipment (WEEE) mark applies only to countries within the European Union (EU) and Norway. This symbol, on the product and accompanying documents, means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, take this product to designated collection points where it will be accepted free of charge. Alternatively, in some countries you may be able to return your

products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation. For business users in the European Union, if you wish to discard electrical and electronic equipment, contact your dealer or supplier for further information.

RESPONSIBLE PARTY

RED Digital Cinema
94 Icon
Foothill Ranch, CA 92610
USA

SAFETY INSTRUCTIONS



WARNING: Class 1 Laser product

Use other than the one described in the user guide may result in hazardous exposure to infrared laser emissions that are not visible to the naked eye. Equipment is to be serviced only by authorized service personnel.



LASER WARNING: Do not look directly into a fiber-optic transceiver or into the ends of fiber-optic cables. Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes.



LASER WARNING: Do not leave a fiber-optic transceiver uncovered except when inserting or removing a cable. The rubber safety cap keeps the port clean and prevents accidental exposure to laser light.



CAUTION: Do not bend fiber-optic cables beyond their minimum bend radius. An arc smaller than a few inches in diameter can damage the cables and cause problems that are difficult to diagnose.

- This equipment is intended to be used by instructed personnel and is not intended to be used by children.
- DO NOT use the camera or accessories near water. Avoid exposing your camera to moisture. The unit is not waterproof, so contact with water could cause permanent damage to the unit as well as electric shock and serious injury to the user. DO NOT use the camera in the rain or under other conditions with high moisture without appropriate protection, and immediately remove power source if camera or accessories are exposed to moisture.



WARNING: To reduce the risk of fire or electric shock, do not expose the camera to rain or moisture.

- DO NOT point the camera directly into extreme light sources such as the sun or lasers. Permanent damage to optical path or sensor may occur, which is not covered by manufacturer's warranty.
- DO NOT expose your camera to excessive vibration or impact (shock). Be careful not to drop your camera. Internal mechanisms may be damaged by severe shock. Mechanical alignment of optical elements may be affected by excessive vibration.
- **ELECTROMAGNETIC INTERFERENCE:** The use of devices using radio or other communication waves may result in the malfunction or interference with the unit and/or with audio and video signals.
- Clean only using a dry cloth. When cleaning your camera, remember that it is not waterproof and moisture can damage electronic circuitry. DO NOT rinse or immerse any element of the camera, lens or other accessory, keep them dry at all times. DO NOT use soaps, detergents, ammonia, alkaline cleaners, and abrasive cleaning compounds or solvents. These substances may damage lens coatings and electronic circuitry.

- Maintain sufficient ventilation—DO NOT block any ventilation openings or obstruct cooling fan airflow.



CAUTION: Proper camera ventilation requires a minimum 0.5" (1.25 cm) clearance between the camera ventilation openings and external surfaces. Verify that objects that can block the fan intake and exhaust ports do not impede airflow. Failure to permit adequate airflow may result in overheating of the camera, degraded operation, and in extreme situations, damage to the camera.



WARNING: Media cards can become very hot during prolonged recording sessions. When ejecting the media card, let it cool before touching it with bare fingers.

- DO NOT operate or store near any heat sources such as radiators, heat registers, stoves, or any other apparatuses that produce heat. Store in a protected, level and ventilated place. Avoid exposure to temperature extremes, damp, severe vibration, strong magnetic fields, direct sunlight or local heat sources during storage. Remove any batteries from the camera before storage. Recommended storage and usage temperatures for your camera, lenses and other accessories are:
 - Operating range: 32° F to 104° F (0° C to 40° C)
 - Storage range: -4° F to 122° F (-20° C to 50° C)
- If there are any performance issues with your camera or accessories when operating within this temperature range, submit a support ticket to <https://support.red.com>.
- DO NOT bypass the third prong of the grounding-type plug on the power cord of the included power adaptor. A grounding-type plug has two blades and a third "grounding" prong. The third prong is provided for your safety. You must connect the plug to an outlet with a protective earth connection. If the grounding-type plug does not fit into your outlet, do not attempt to modify the plug or outlet, consult a qualified electrician.
- Protect all power cords from being pinched, walked on, or driven over by a vehicle. Replace any power cords suspected of sustaining damage due to crushing or other forms physical damage.



CAUTION: Install this camera in a proper support system that can handle the entire weight of the camera and the accessories. Secure the camera by using the 1/4-20 and/or the 3/8-16 mounting points located on the bottom of the camera. Always verify that the screws are tightened properly. When the camera is not properly attached, or is placed on an unstable surface, the camera can fall and cause injury or be damaged.



CAUTION: Products marked with this symbol are Class 2 devices. These double insulated devices are not provided with a grounding type plug.



CAUTION: The power cord plug for the included power adaptor is used as the power disconnect. To disconnect all power from the power adaptor, unplug the power cord plug from the wall outlet. During use, the power cord plug should remain easily accessible at all times.



CAUTION: Refer all service and repair to qualified RED service personnel. To reduce the risk of electric shock, and damage to the camera or accessories, DO NOT attempt to perform any servicing other than any procedures that are recommended in the operating instructions.



INDOOR USE ONLY: This device is designed primarily for indoor use.

1. INTRODUCTION

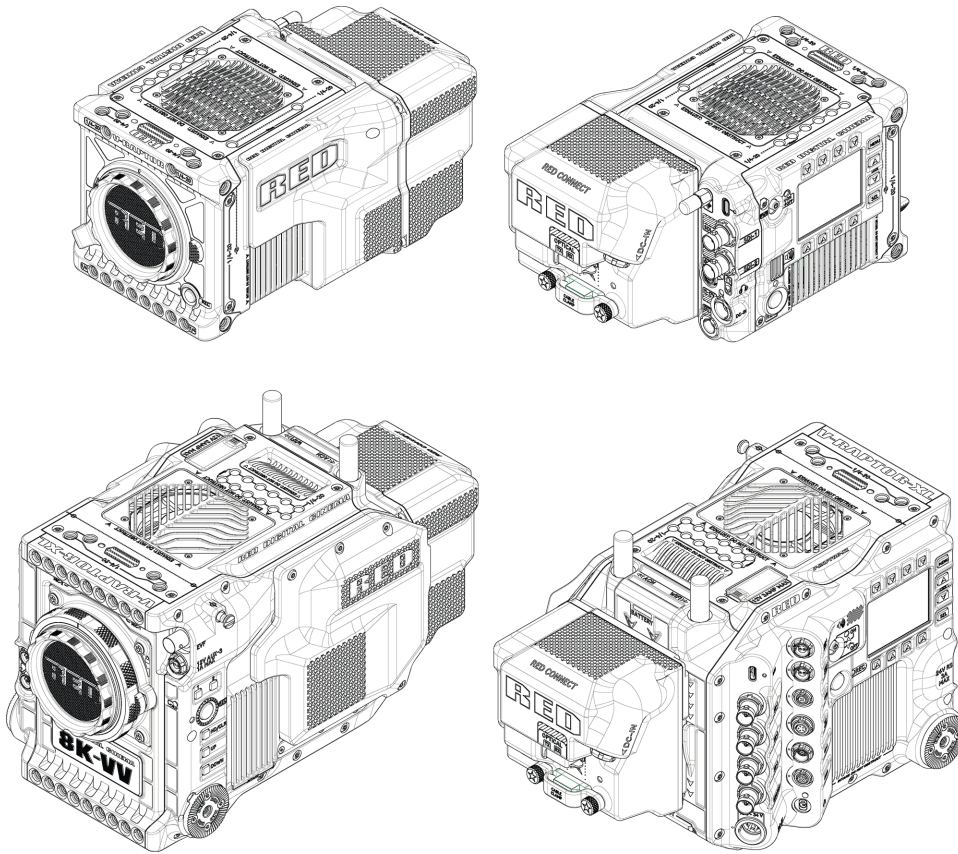


Figure: V-RAPTOR and V-RAPTOR XL with RED Connect Module

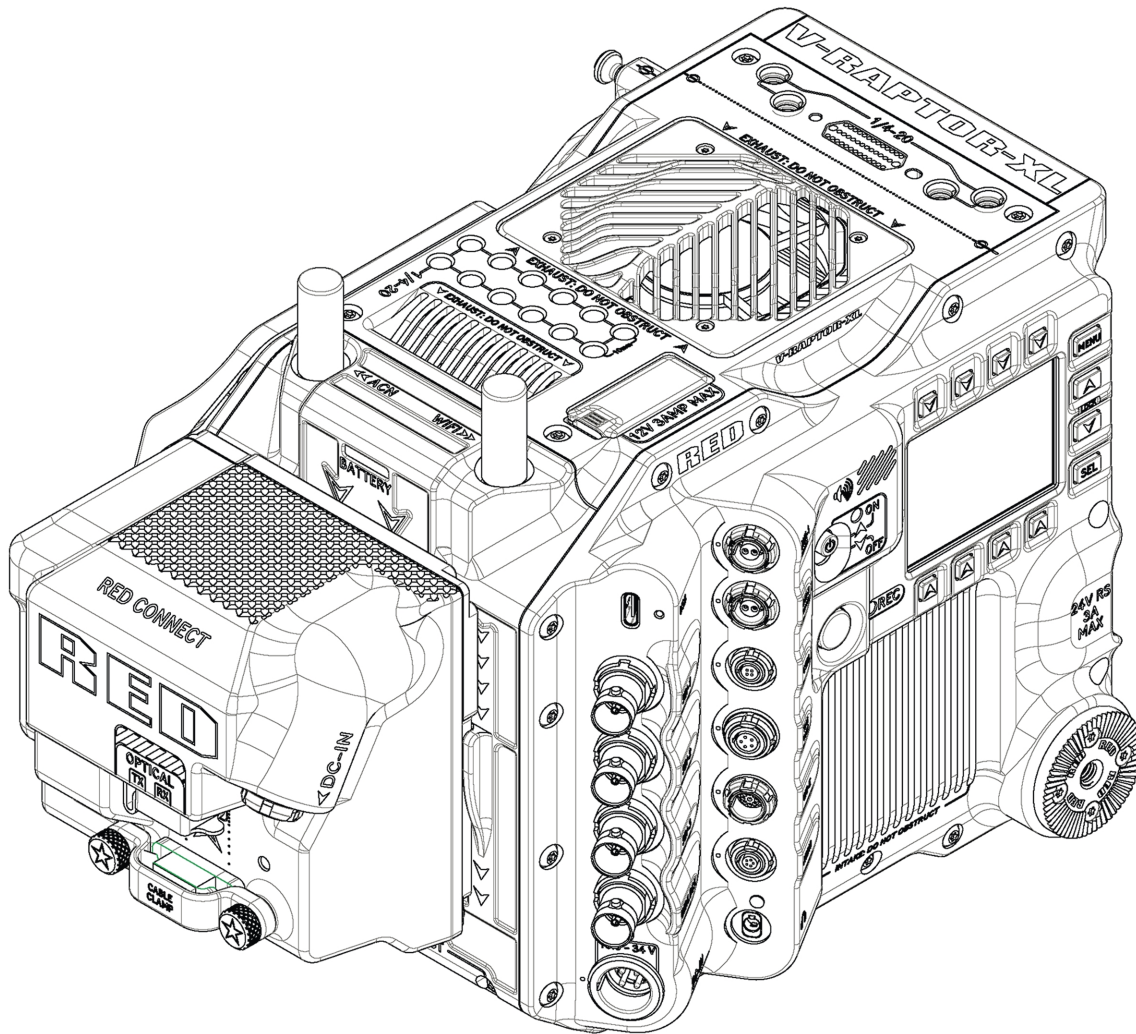
RED CONNECT MODULE

The RED Connect Module connects to your V-RAPTOR or V-RAPTOR XL camera to unlock 8K live cinematic streaming using the groundbreaking RED Connect solution. RED Connect enables you to stream RAW R3D files directly from the V-RAPTOR and V-RAPTOR XL camera systems over IP to a camera control unit (CCU) in real-time. RED Connect opens you up to an extraordinary range of creative applications, from live broadcast, to virtual production, and to true 8K VR.

ADDITIONAL RESOURCES

- **RED.com:** Visit the [official RED website](#) for the latest information about RED products.
- **RED Downloads:** Go to [RED Downloads](#) to download the latest firmware, operation guides, and post-production software.
- **RED 101 Articles:** RED offers [in-depth technical articles](#) about RED cameras, post-production, and digital cinematography.
- **RED TECH Videos:** RED offers [videos](#) about understanding and using RED cameras.
- **RED Support:** Visit the [RED SUPPORT site](#) for support articles or to file a support ticket.

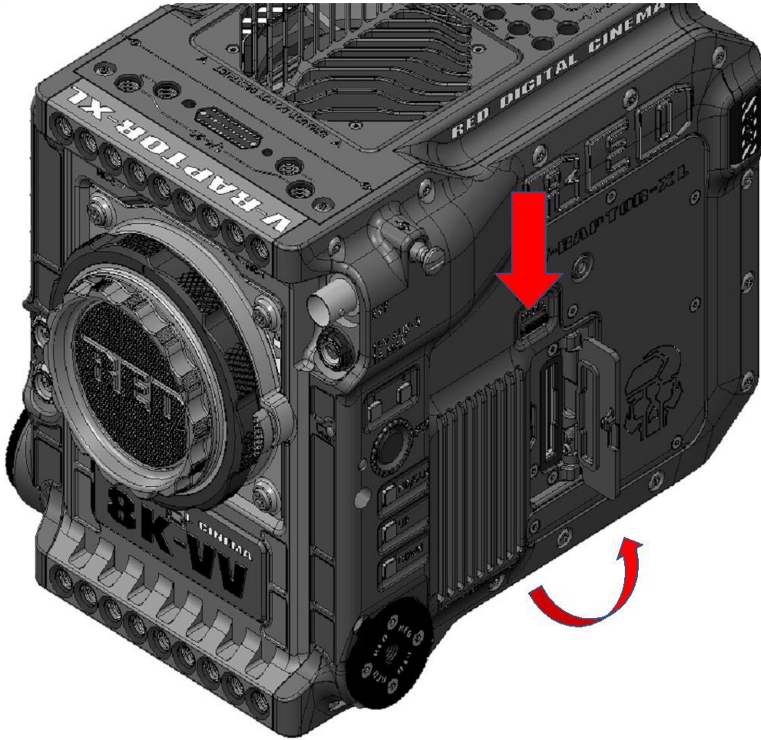
2. INSTALLING RED CONNECT MODULE



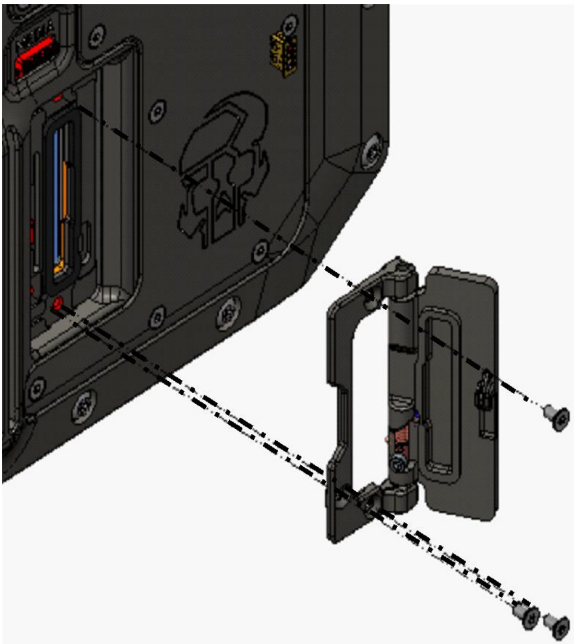
The RED Connect Module is available for V-RAPTOR and V-RAPTOR XL V-Lock models.

Perform the following to install the RED Connect Module:

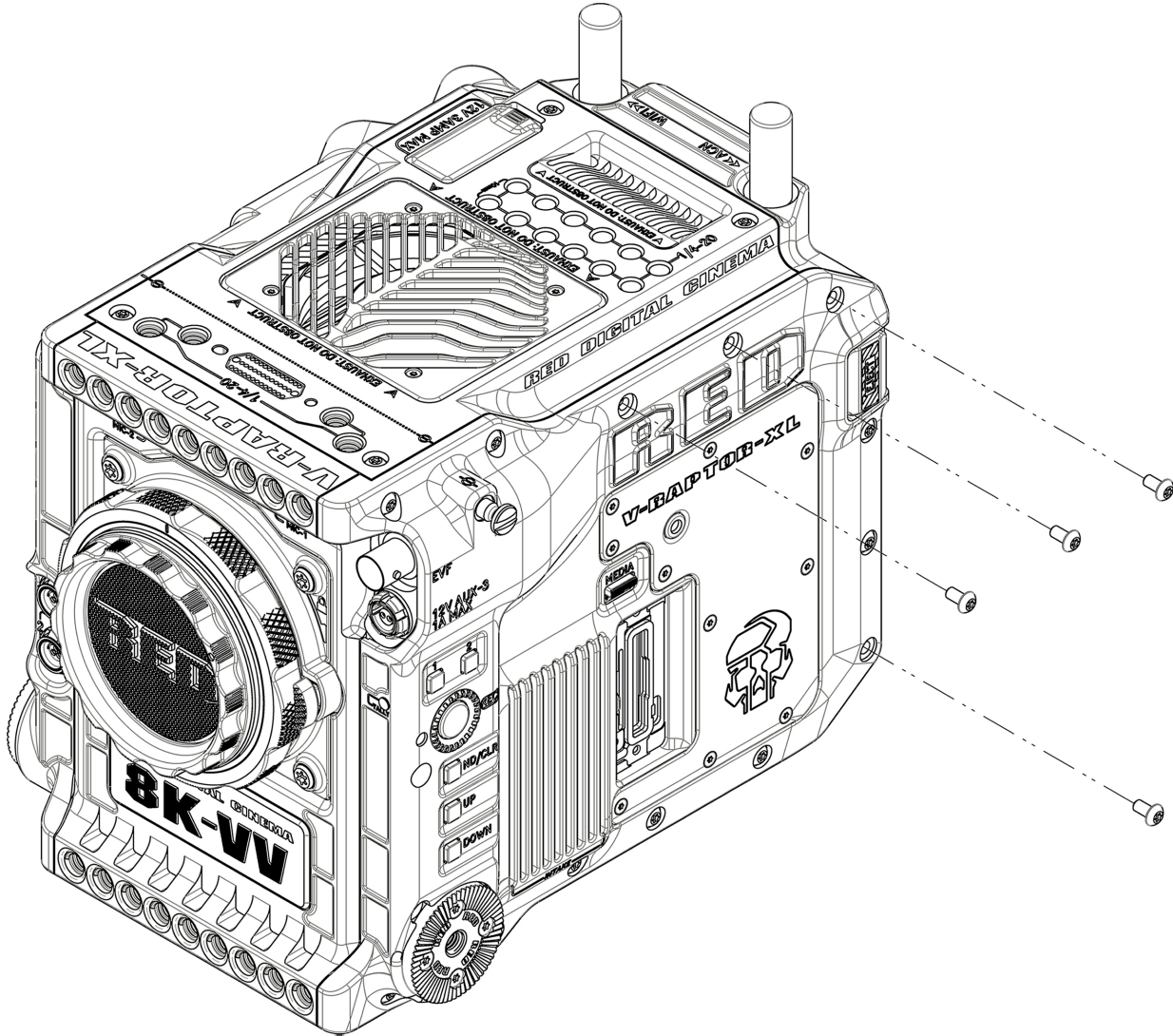
1. Open the CFexpress media door.



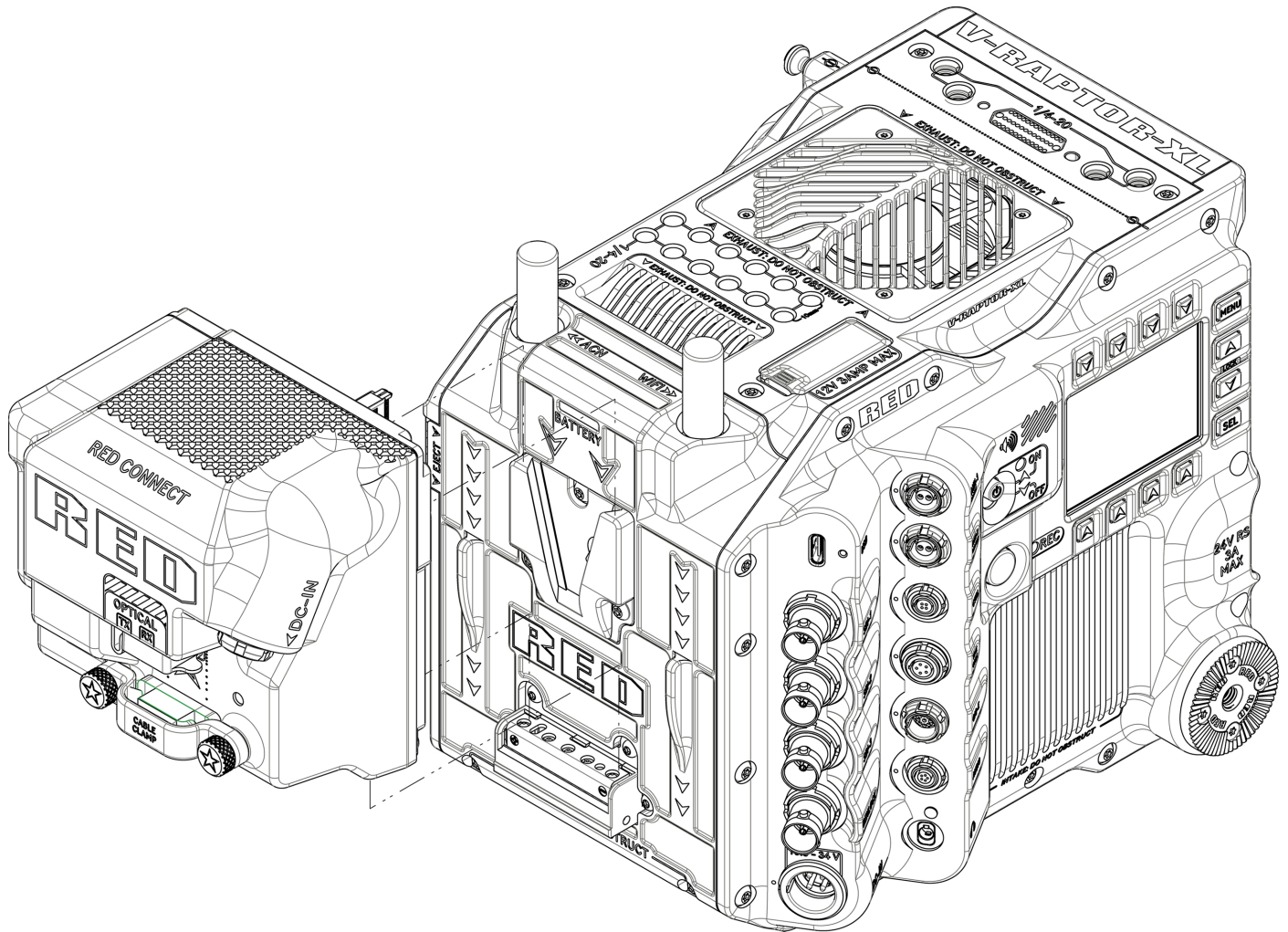
2. Remove the three screws (T8 and T10) from the CFexpress door frame and remove the frame.



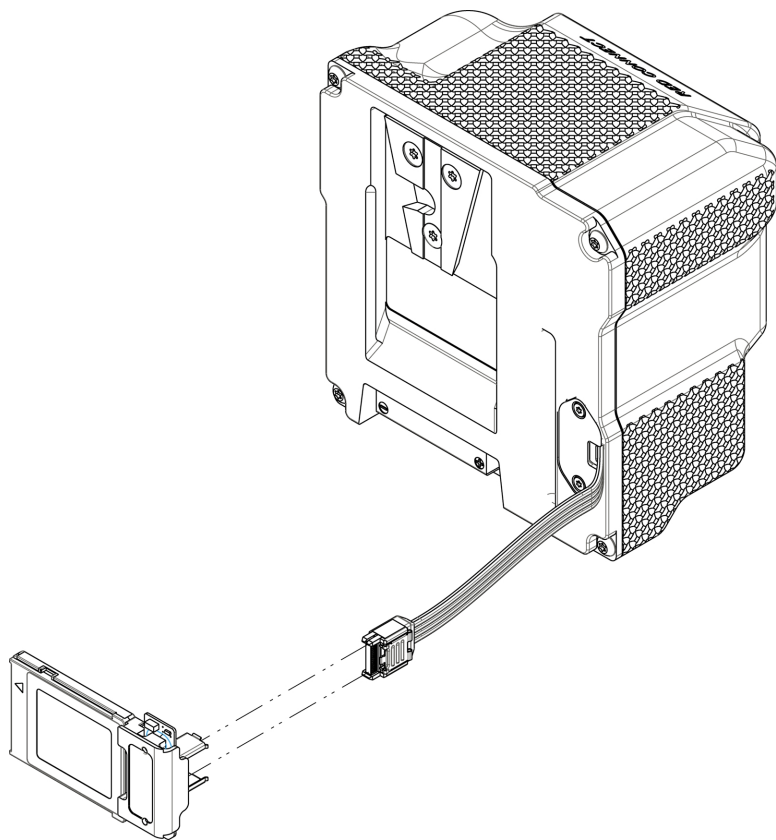
3. Remove four screws (T10) from the left side of the camera to mount the RED Connect Module cable cover.



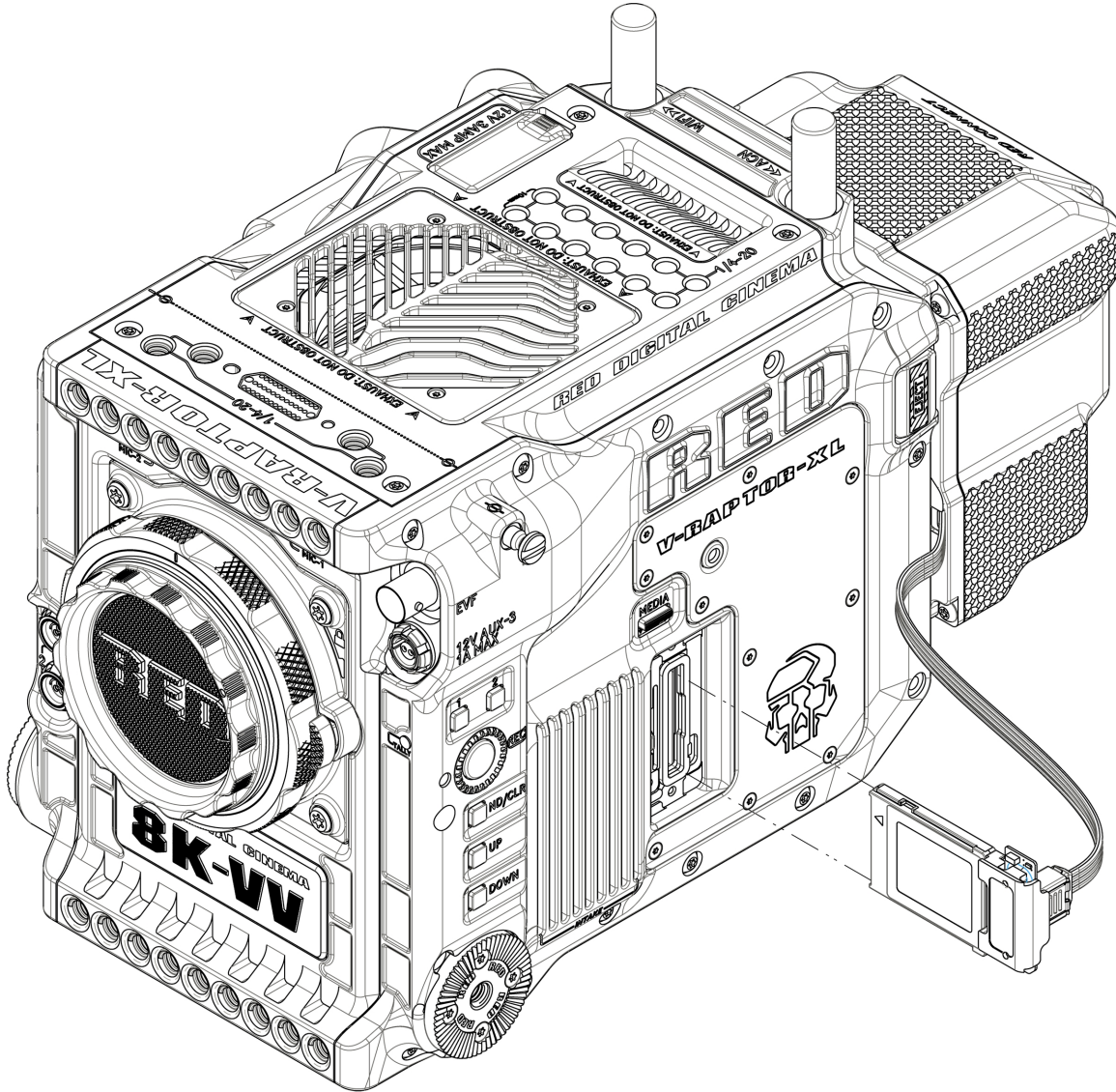
4. Attach the RED Connect Module to the V-Lock mount on the back of the camera.



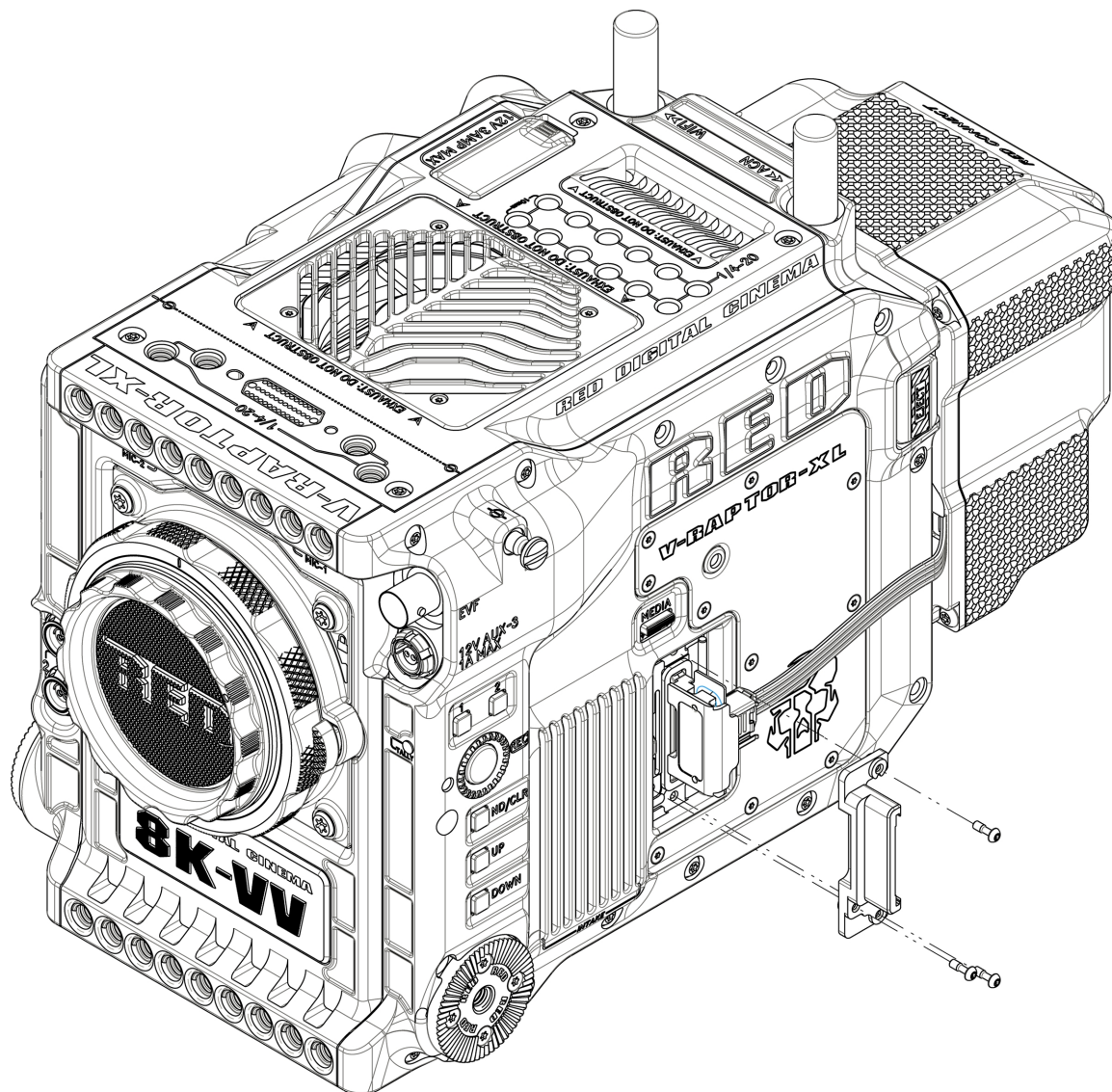
5. Attach the CFexpress adapter to the module cable.



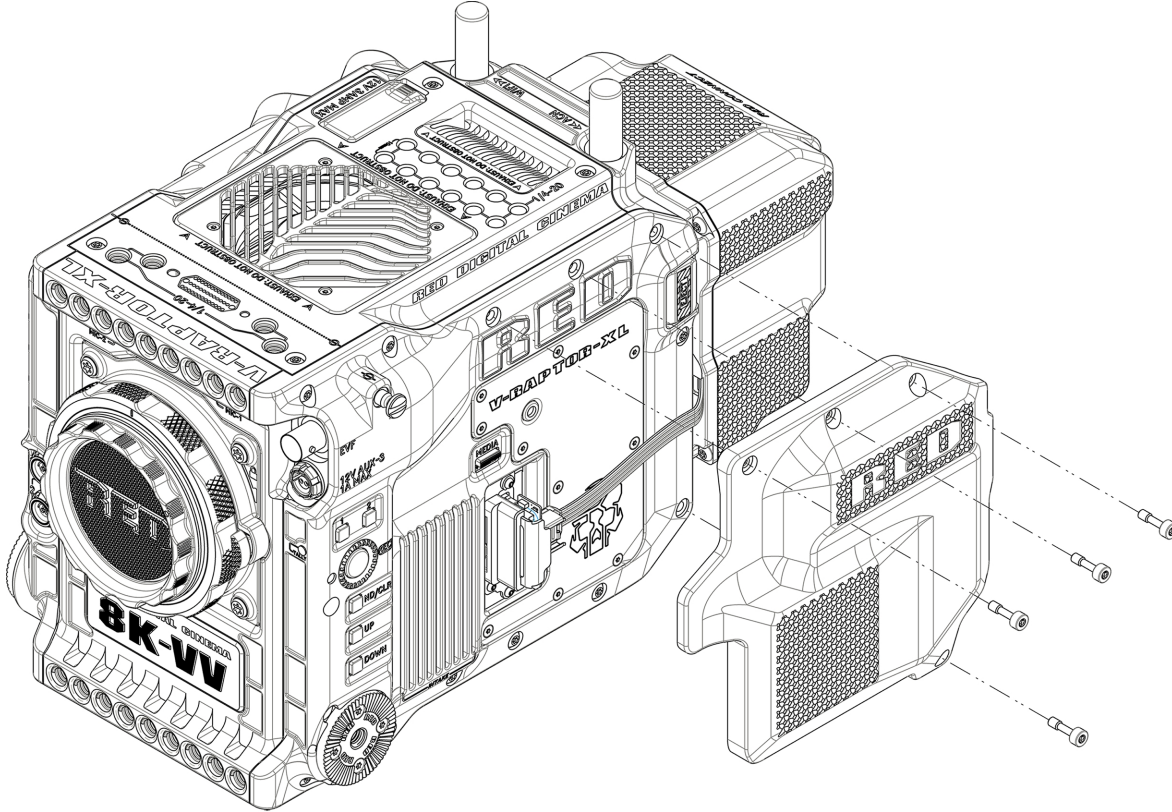
6. Insert the CFexpress adapter in the CFexpress port of the camera.



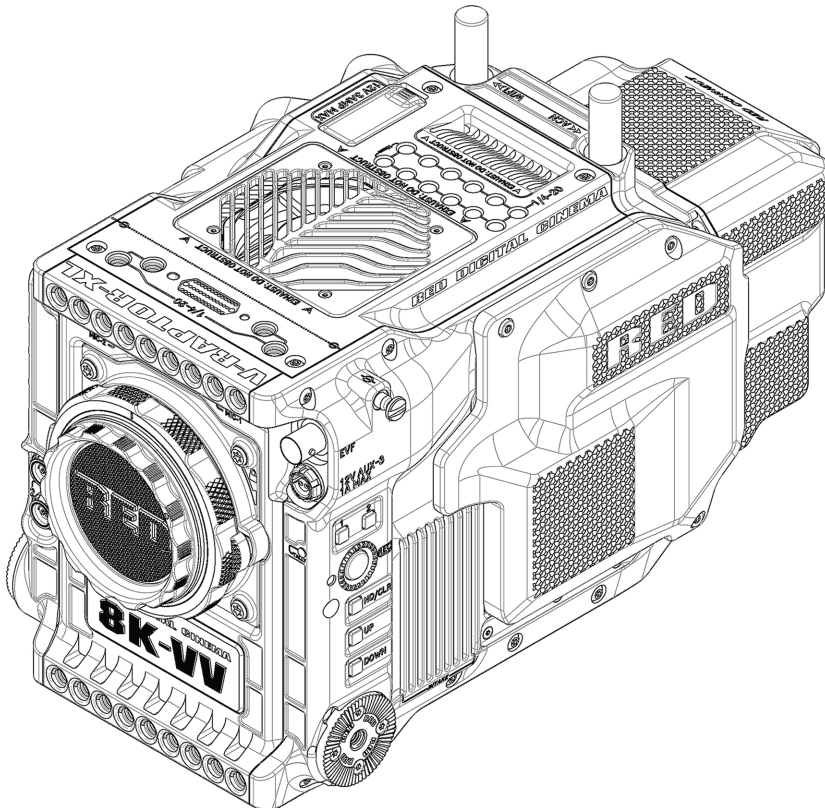
7. Attach the CFexpress retention bracket with three screws (T6).



8. Attach the RED Connect Module side CFexpress cable cover using four screws (T10).



The RED Connect Module is ready for you to use.



3. TROUBLESHOOTING

GENERAL TROUBLESHOOTING TIPS

This section describes general troubleshooting tips:

1. Confirm the Firmware version currently installed on your camera. Each firmware release contains bug fixes and other improvements. You may be experiencing a bug resolved in a later release.
 - You can find this under **Menu>System Settings>System Status>Camera Info**.
 - To confirm and download the latest firmware version, visit red.com/downloads.
 - If your current firmware is out-of-date, please upgrade to the latest release build found on red.com/downloads.
2. Reboot the camera by powering it off and back on.
3. Test the camera by installing an alternate or recently formatted CFexpress card.
4. Ensure that all of the cables and connections are fully seated and locked in place (if applicable).
5. Remove all attached accessories, RED and third-party. Ensure all contacts are clean, undamaged, and free of debris before remounting. Try booting the camera using the AC power adaptor without any accessories attached to determine whether the issue persists before reattaching any accessories.
6. Try rebooting the camera again after reattaching the accessories. If the camera boots without accessories and the symptom reoccurs after reattaching, try adding the accessories one at a time to isolate the root cause. This helps narrow down root causes to specific accessories and helps to ensure that a bad connection is not the source of the issues.
7. Perform a Reset Defaults. This will restore all camera settings back to factory default settings and reduce the possibility that applied settings caused the issue.

You can find this under **Menu>Maintenance>Reset Defaults**.
8. As a last resort, perform a Hard Restore. This will restore all camera settings back to factory default settings but goes a step further to clear camera internal memory.
 - a. Remove all attached accessories, RED and third-party, leaving only an AC power adaptor attached.
 - b. Turn the camera off.
 - c. Press and hold the REC button and at the same time switch the power ON.
 - d. Continue to hold the REC button until the camera finishes booting and the license agreement displays.

This completes the hard restore.

CONTACT SUPPORT

If your camera continues to misbehave after you have performed these troubleshooting steps, submit a request for Technical Support. Include the following with the request:

- A detailed description of the issue and events that led up to its occurrence, including steps to replicate.
- A description of the rate of occurrence confirming whether the symptom is rare, intermittent, or continuous.
- A freshly saved camera Log File. The Log File can be saved through **Menu>Maintenance>Save Log**. Refer to for more information.
- Please confirm the firmware version currently installed. The firmware version number can be found under **Menu>System Settings>System Status>Camera Info**.
- A short video detailing the issue that is occurring, showing your camera setup and all attached accessories.
- Detailed list of accessories (RED and third-party), lens, and modules attached at the time the issue occurred.
- How were the camera and attached accessories powered when the issue first occurred?

A. MECHANICAL DRAWINGS

NOTE: Dimensions are shown in mm.

FRONT VIEW

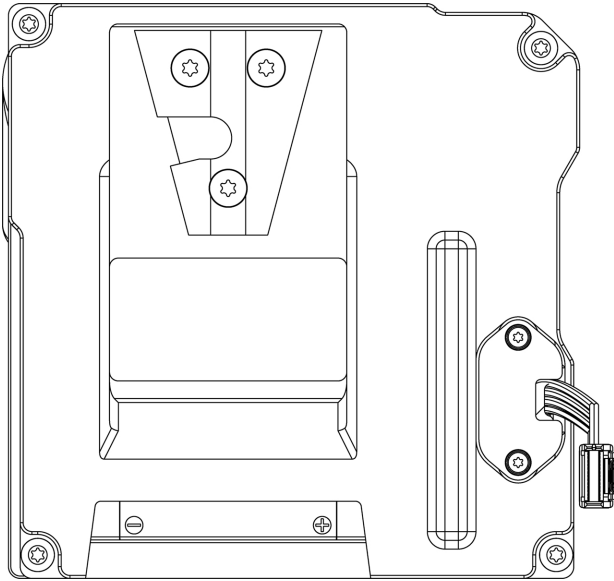


Figure: Module Front View

BACK VIEW

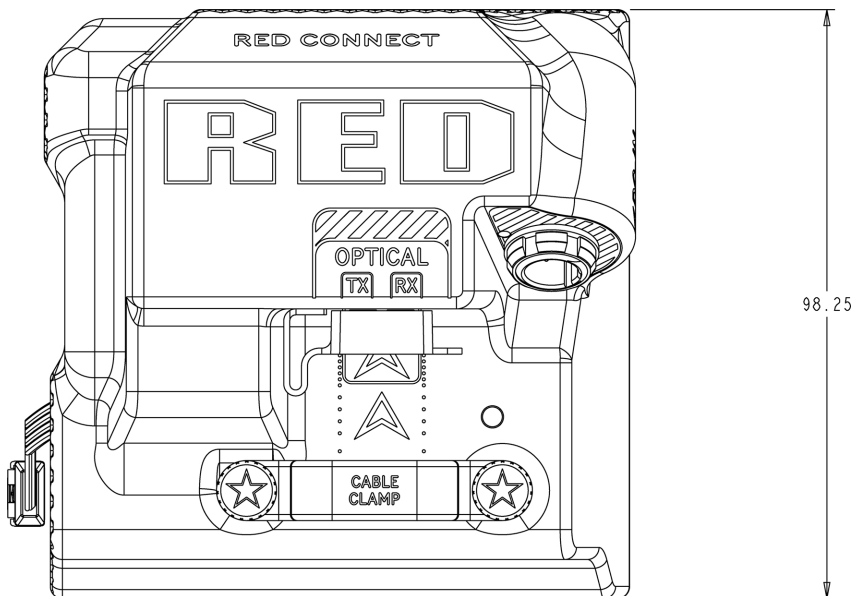


Figure: Module Back View

RIGHT SIDE VIEW

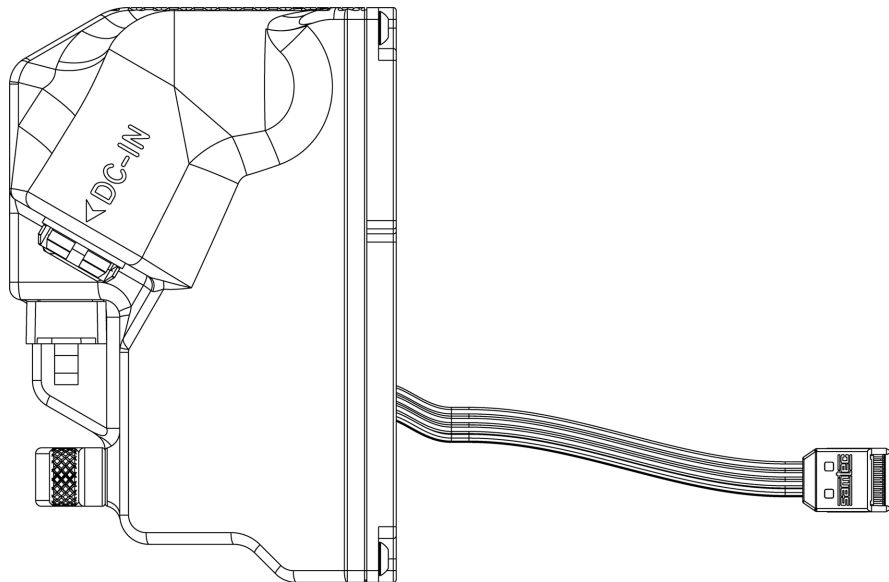


Figure: Module Side View (Right)

LEFT SIDE VIEW

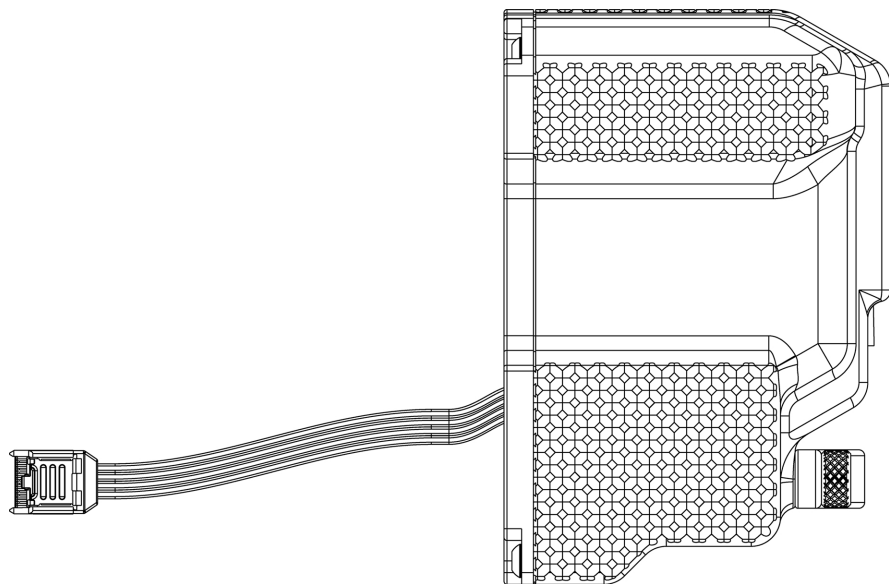


Figure: Module Side View (Left)

TOP VIEW

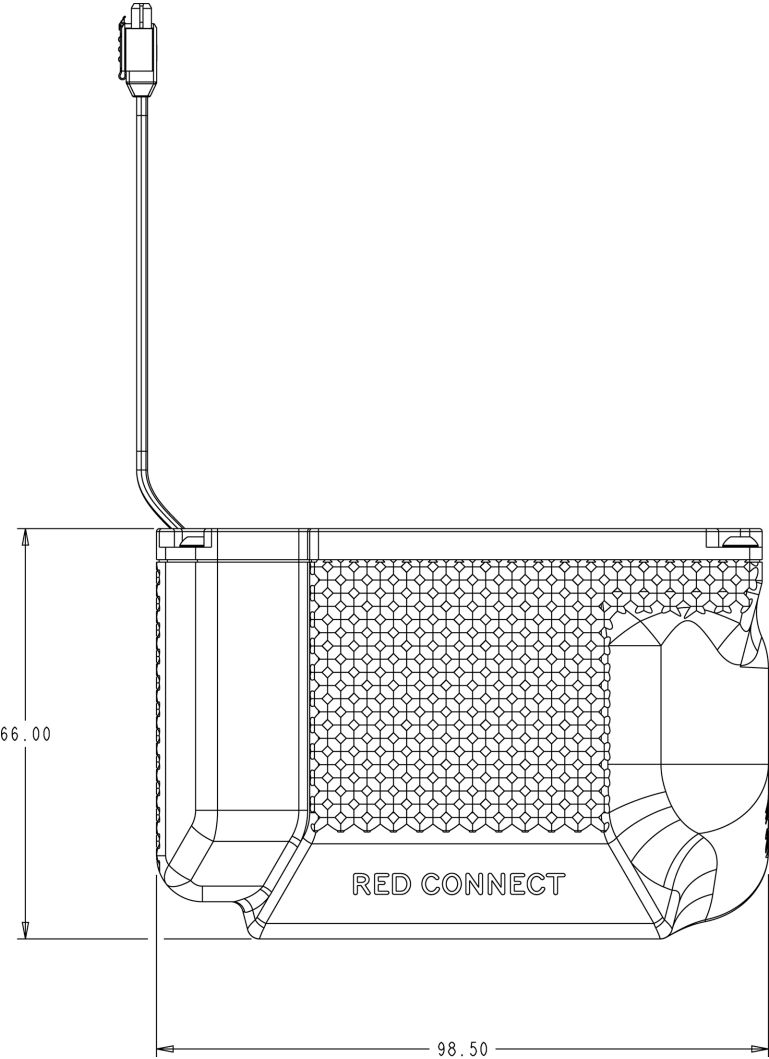


Figure: Module Top View

BOTTOM VIEW

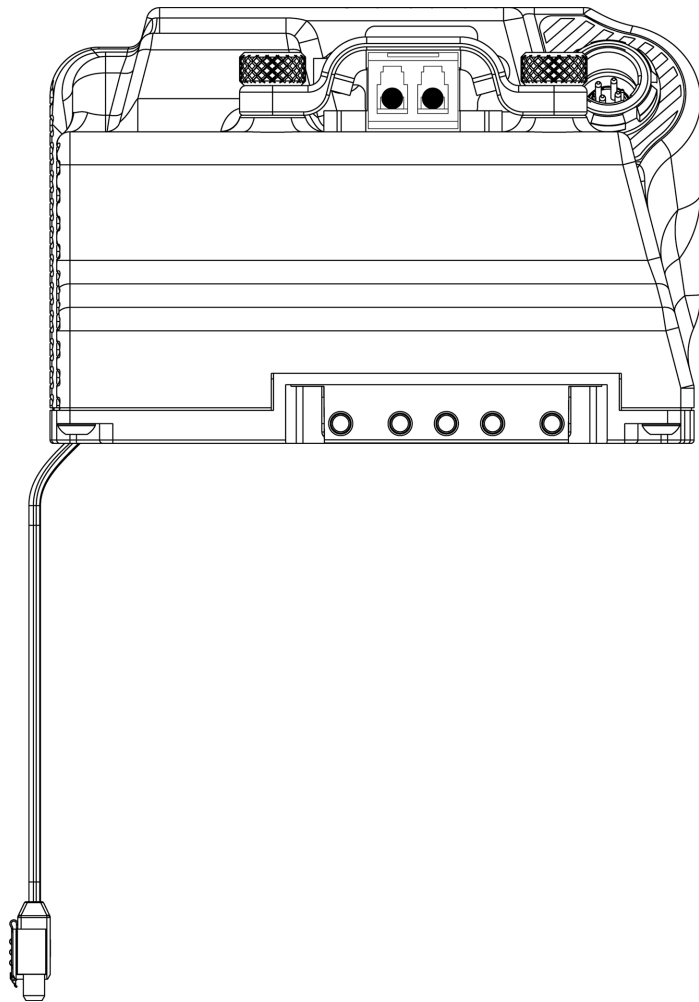
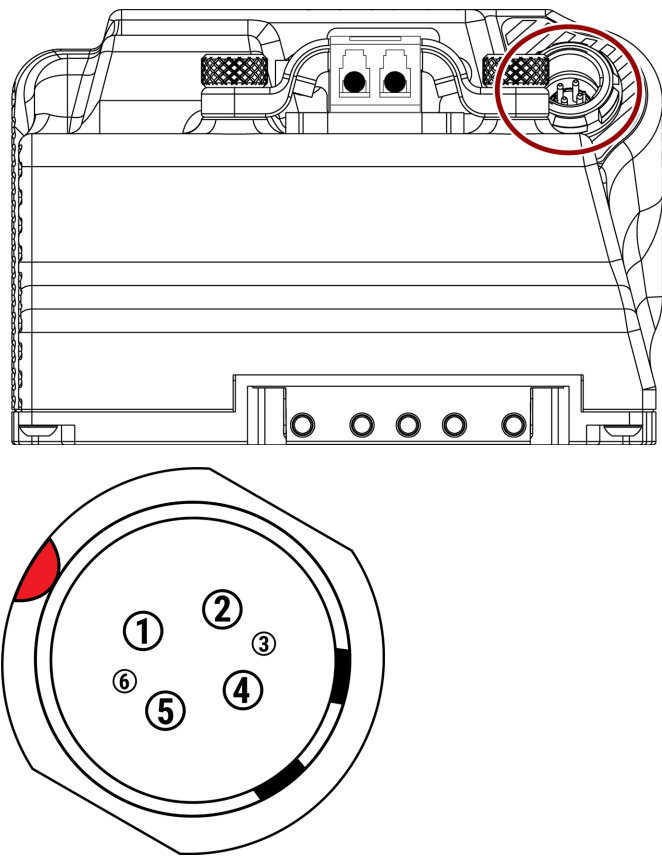


Figure: Module Bottom View

6-PIN DC-IN



The male 6-Pin 1B DC-IN connector accepts DC input power from 11 V DC to 17 V DC for the V-RAPTOR and 19.5 V DC to 34 V DC for the V-RAPTOR XL. A built-in power conditioner protects against reverse-polarity connections, electrostatic discharge (ESD), undervoltage, overvoltage, and overcurrent.

WARNING: Both pairs of +VBATT and GROUND pins must be wired. Using a third-party power cable that wires only one (1) pair of +VBATT and GROUND pins may damage the power supply or the camera. Damage to the power supply or other components of the camera system caused by using an inappropriate power cable is not covered under warranty.

Figure: Front face of the male 6-Pin 1B DC power input connector (looking at the bottom of the module).

6-PIN 1B DC INPUT CONNECTOR

PIN	SIGNAL	DESCRIPTION
1	+VBATT	Power input, +11.5 to +34 V DC
2	+VBATT	Power input, +11.5 to +34 V DC
3	SCL-BATT	Battery SMBus SCL signal (3.3 V)
4	GROUND	Power return (camera ground)
5	GROUND	Power return (camera ground)
6	SDA-BATT	Battery SMBus SDA signal (3.3 V)

NOTE: Mating connector is FGJ.1B.306.CWLD72Z.

COMPATIBLE CABLES

- **790-0638:** DSMC AC Power Adaptor Pack
- **790-0164:** XLR Power Cable (10')
- **790-0291:** DSMC Battery Belt Clip
- **XXX-XXXX:** XL 4-Pin to 6-Pin RED Connect Module DC adapter

FIBER OPTIC PORT

The single mode duplex 1310 nm LC UPC fiber optic ports provide 10 Gigabit bandwidth for 8K 120 fps broadcast performance.

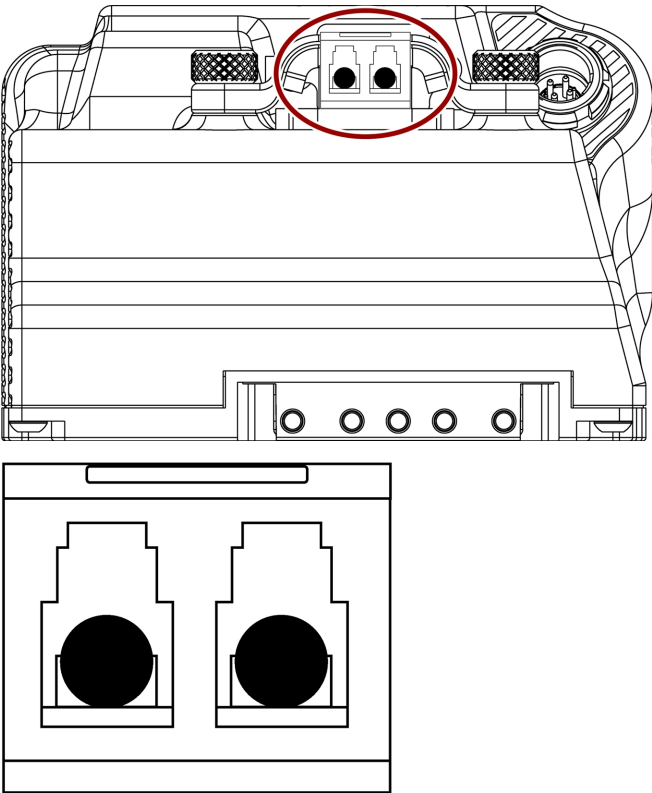


Figure: Front face of the fiber optic connector (looking at the back of the module).

LC UPC FIBER OPTIC TRANSCEIVER PORT

PIN	SIGNAL	DESCRIPTION
1	Transmit	Transmits the camera signal to the camera control unit (CCU)
2	Receive	Receives RCP2 commands from the camera control unit (CCU)

NOTE: Mating connector is standard LC UPC Fiber patch cable.

B. TECHNICAL SPECIFICATIONS

Technical specifications reflect both current and projected information. Everything is subject to change.

RED CONNECT MODULE	
ITEM	DETAILS
Connection to Camera	CFexpress media slot
Outputs	Standard single-mode (1310 nm) LC UPC fiber ports (transmit and receive)
Construction	Aluminum Alloy and rubber
Weight	1.02 lb V-RAPTOR RED Connect Module 1.08 lb V-RAPTOR XL RED Connect Module
Dimensions (excluding cable and cable cover)	Height: 3.87 in. (98.25 mm) Width: 3.88 in. (98.50 mm) Depth: 2.60 in. (66.00 mm)
DC Power	+11.5 to +34 volts DC using the integrated 6-Pin DC-IN port (XL requires 4-Pin to 6-Pin adapter)
Operating Temperature	32° F to 104° F (0° C to 40° C)
Storage Temperature	-4° F to 122° F (-20° C to 50° C)
Relative Humidity	0% to 85% non-condensing