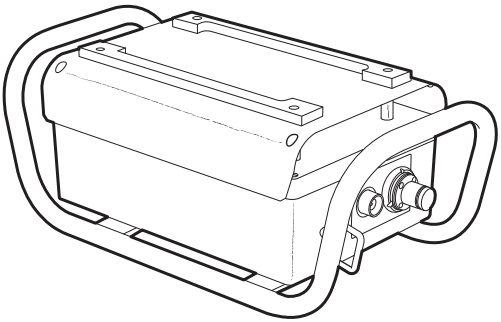
grass valley

User's Guide

3922 496 31941 March 2012 v1.0



LDK 4427

3G Fiber Camera to 3G Triax Converter

Declaration of Conformity

We, Grass Valley Nederland B.V., Kapittelweg 10, 4827 HG Breda, The Netherlands, declare under our sole responsibility that this product is in compliance with the following standards:

- EN60065 : Safety
- EN55103-1:2009 EMC (Emission) for the following environments:

  (E1) Residential;

  (E2) Commercial and light industrial;

  (E3) Urban outdoors;

  (E4) Controlled EMC environment, and the rural outdoors environment.
- EN55103-2: EMC (Immunity)

following the provisions of:

- the EMC directive 2004/108/EC
- the Low Voltage directive 2006/95/EC

FCC Class A Statement

This product generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause interference to radio communications.

It has been tested and found to comply with the limits for a class A digital device pursuant to part 15 of the FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

Operation of this product in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Copyright

Trademarks

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End-of-life product recycling

Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive and in the United States from the Environmental Protection Agency, individual state or local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight, however you are responsible for the removal of the equipment from your facility and packing the equipment ready for pickup.

For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the US and Canada please call 800-547-8949 or 530-478-4148. Ask to be connected to the EH&S Department. In addition, information concerning Grass Valley's environmental policy can be found at:

www.grassvalley.com/about/environmental-policy

Packing/Unpacking

Inspect the shipping container for evidence of damage immediately after receipt. If the shipping container or cushioning material is damaged, it should be kept until the contents of the shipment have been checked for completeness and the unit has been checked mechanically and electrically.

The shipping container should be placed upright and opened from the top. Remove the cushioning material and lift out the contents.

The contents of the shipment should be checked against the packing list. If the contents are incomplete, if there is mechanical damage or defect, or if the unit does not perform correctly when unpacked, notify your Grass Valley sales or service centre within eight days.

If the shipping container shows signs of damage or stress, notify the carrier as well. If the unit is being returned to Grass Valley for servicing, try to use the containers and materials of the original packaging. Attach a tag indicating the type of service required, return address, model number, full serial number and the return number which will be supplied by your Grass Valley service centre.

If the original packing can no longer be used, the following general instructions should be used for repacking with commercially available materials:

- Wrap unit in heavy paper or plastic.
- Use a strong shipping container.
- Use a layer of shock-absorbing material around all sides of the unit to provide firm cushioning and prevent movement inside container.
- Seal shipping container securely.
- Mark shipping container FRAGILE to ensure careful handling.

Important information

Read this information carefully before installing this equipment and retain them for future reference. Read and comply with the warning and caution notices that appear in the manual. Any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

Safety Summary

This information is intended as a guide for trained and qualified personnel who are aware of the dangers involved in handling potentially hazardous electrical/electronic equipment. It is not intended to contain a complete list of all safety precautions which should be observed by personnel in using this or other electronic equipment.

The installation of this equipment involves risks both to personnel and equipment and must be performed only by qualified personnel exercising due care.

During installation and operation of this equipment, local building safety and fire protection standards must be observed.

Whenever it is likely that safe operation is impaired, the apparatus must be made inoperative and secured against any unintended operation. The appropriate servicing authority must then be informed. For example, safety is likely to be impaired if the apparatus fails to perform the intended function or shows visible damage.

Read and comply with the warning and caution notices that appear in the manual.

This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” source within the unit's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons. Accordingly it is dangerous to touch any parts within this unit.

Warnings

Warnings indicate danger that requires correct procedures or practices to prevent death or injury to personnel.

Do not modify this equipment;

- Do not use any accessories other than those recommended by the manufacturer;
- In case of an emergency ensure that the power is disconnected;
- Mount equipment so that power lead can be accessed to disconnect power;
- There are no user serviceable parts inside. Refer servicing to qualified personnel only or contact your local Grass Valley representative;

- Observe local building safety, fire protection and electrical installation standards during installation and operation of this equipment;
- Whenever it is likely that safe operation is impaired, the apparatus must be made inoperative and secured against any unintended operation.

Cautions

Cautions indicate procedures or practices that should be followed to prevent damage or destruction to equipment or property.

- Do not subject the unit to severe shocks or vibration;
- Do not expose the unit to extremes of temperature;
- To prevent risk of overheating, ventilate the product correctly: do not cover the unit with a rain cover as this may obstruct proper ventilation of the unit.

Dust and water protection

The unit is protected according to IEC 60529 IP54 (dust-protected and resistant to splashing water) and it is tested for outdoor use. This means that splashing against the enclosure from any direction shall have no harmful effect.

When not in use, always protect connectors with their dust/protection caps.

Fiber-optic transmission units

Laser safety statement (Europe)

Fiber-optic transmission units are classified as a "CLASS 1 Laser Product" according to EN 60825-1, Safety of Laser products. Class 1 laser products are considered safe and do not result in biological hazard if used according to the instructions.

Laser safety statement (US)

Fiber-optic transmission units are classified as a "CLASS 1 Laser Product" according to 21CFR 1040.10 of the US Food and Drug Administration (FDA) Center for Devices and Radiological Health.

Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

Fiber-optic cable precautions

Fiber-optic cables and connectors are easily damaged; take the following percautions into account:

- Do not bend the cable beyond the minimum permissible bend range specified for the cable.
- Avoid kinks in the cable.
- Avoid subjecting the cable to a high tension force (even momentarily).
- Do not twist the cable when connecting it to equipment.
- Insert connectors straight and fully into their corresponding sockets.
- In fiber-optic cable systems always put the dust caps on cable and panel connectors immediately after disconnecting a cable. Keep the dust caps clean.

Cleaning fiber-optic connectors

Warning

Never clean an optical connector attached to a fiber that is carrying light.

Particles of foreign matter on the tip of a ferrule can have a disabling effect on fiber-optic transmission. Fiber-optic connectors need to be cleaned every time they are mated and unmated; it is essential that fiber-optic users develop the necessary discipline to always clean the connectors before they are mated.

Use a commerially available cleaning kit specifically designed for fiber-optic connectors and follow the manufacturer's instructions carefully.

- The connector sections to be cleaned include the tips and sides of ferrules, the interior walls of alignment sleeves, and the interior and exterior of connector shells.
- For plugs, the interior surfaces of alignment sleeves and the tips of ferrules are to be cleaned with a cleaning stick treated with the appropriate fluid. (Cleaning sticks with a slender design are available that allow alignment sleeves to be cleaned without having to detach them.)
- For jacks, it is important to clean both the tips and sides of the completely protruding ferrules.
- Both the male and female connector shells tend to attract dust and metal particles, so it is important to clean both the insides and outsides.
- The fiber end face and ferrule must be absolutely clean before it is inserted into a transmitter or receiver.
- Mate the connector immediately! Don't let the connector lie around and collect dust before mating.
- Air can be used to remove lint or loose dust from the port of a transmitter or receiver to be mated with the connector. Never insert any liquid into the ports.

Chapter 1

Installation

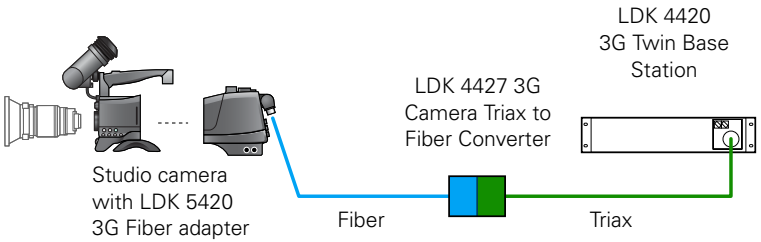
1.1 Introduction

The 3G Fiber Camera to 3G Triax Converter is used to convert 3G Fiber signals coming from a camera with an LDK 5420 3G Fiber adapter to Triax signals that are routed to the LDK 4420 3G Twin or LDK 4400 3G Triax Base Station. The converter and the camera system are both powered by the Triax or Twin base station.

1.2 Configurations

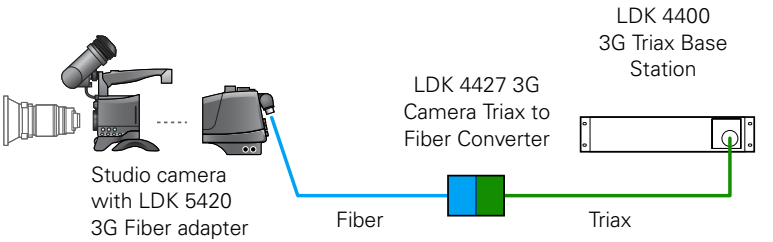
1.2.1 3G Fiber to 3G Triax (with LDK 4420)

A studio camera with a 3G Fiber adapter is connected to the converter with a hybrid fiber cable.



1.2.2 3G Fiber to 3G Triax (with LDK 4400)

A studio camera with a 3G Fiber adapter is connected to the converter with a hybrid fiber cable.

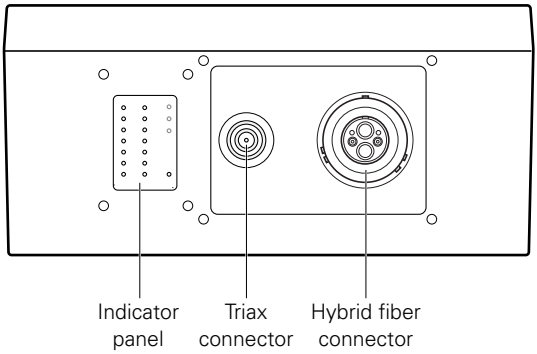


1.2.3 Versions

The following versions of the 3G Fiber Camera to 3G Triax Converter are available:

Product version	Hybrid fiber connector	Triax connector
LDK 4427/00	Lemo	Fisher
LDK 4427/05	Lemo	ARD
LDK 4427/10	Lemo	Lemo-4E
LDK 4427/15	Lemo	Lemo-3T
LDK 4427/40	Lemo	BBC Lemo
LDK 4427/50	Lemo	Trilock

1.3 Location of connectors and indicators

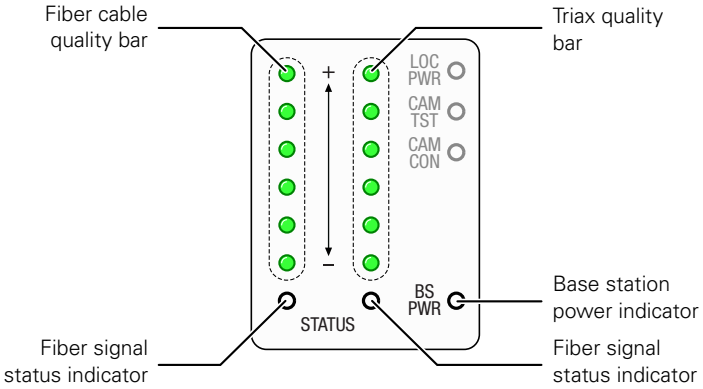


Chapter 2

Operation

2.1 Indicator panel

During operation the indicator panel gives an overview of the transmission quality:



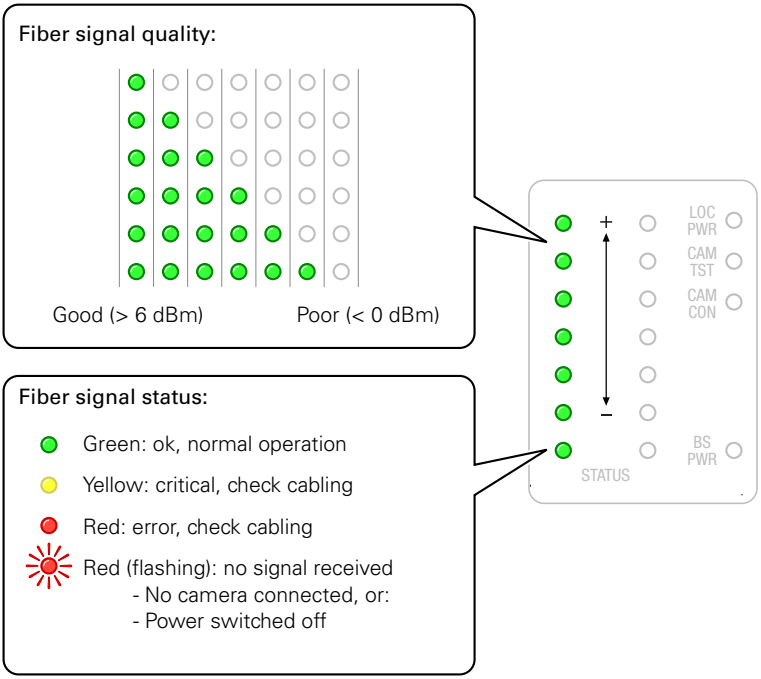
2.2 Transmission

2.2.1 Fiber signal

At the left side of the control panel, a vertical bar of six green lights show the cable quality of the fiber connection between the camera and the converter unit. More lights mean better quality. When all six indicators are lit, transmission is optimal.

The values in the table below indicate the optical margin (budget) left.

The indicator at the bottom provides signal status information about the Triax connection between the convertor unit and the camera.

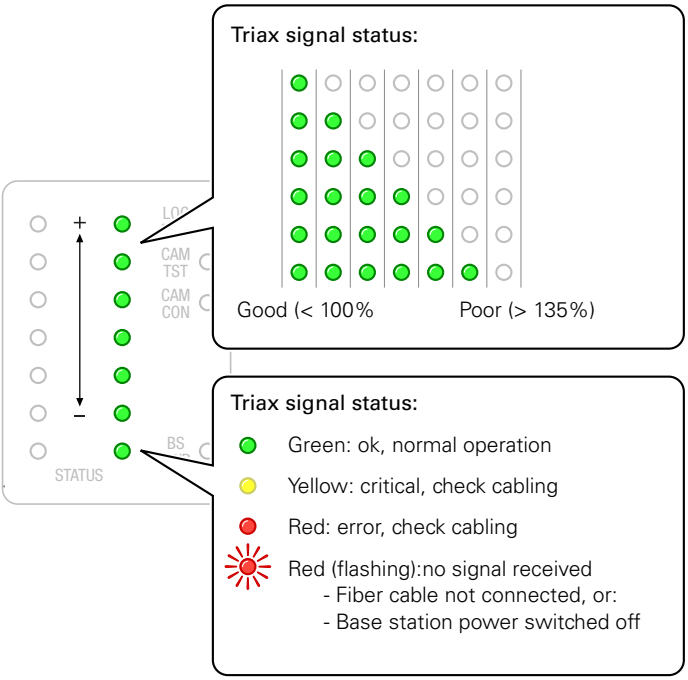


2.2.2 Triaxconnection

At the right side of the control panel, a vertical bar of six green lights show the cable quality of the Triax connection between the base station and the converter unit. More lights mean better quality. When all six indicators are lit, transmission is optimal.

The values in the table below indicate the percentage of the nominal (100%) cable length in use.

The indicator at the bottom provides signal status information about the Fiber connection between the Base Station and the convertor.



Chapter 3

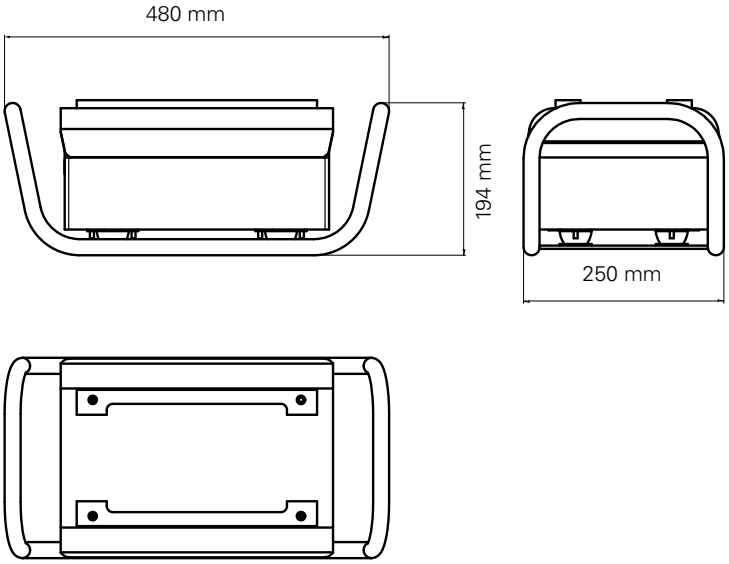
Specifications

3.1 Technical specifications

3.1.1 General

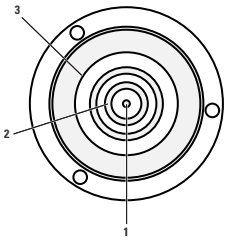
Dimensions (W x H x L)	250 x 194 x 480 mm (9.8 x 7.6 x 18.9 in)
Weight (approx.)	8.3 kg (18.3 lbs)
Operating temperatures	-20 to +45 °C (-4 to +113 °F)
Storage temperatures	-25 to +60 °C (-13 to +140 °F)
Triax connector	Depending on product version
Triax cable length	1,200 m (3,900 ft) using 14 mm (0.55 in) Triax cable
Fiber connector	Depending on product version
Fiber cable length	Depending on connectors and optical budget

3.1.2 Dimensions



3.2 Connectors

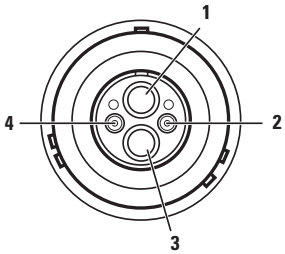
3.2.1 Triax connector



Various types available

Pin	Description
1	Inner pin: signal + power
2	Inner shield: Return
3	Outer shield: Housing

3.2.2 Hybrid fiber connector



Various types available

Pin	Description
1	Fiber A (cam to base station)
2	Power supply return
3	Fiber B (base station to cam)
4	Power supply (300 VDC)

Hybrid fiber connector is compliant with SMPTE 304M.

Printed in The Netherlands