



## LTM-4DV 4-Channel DV Head-End DV Transcoder with Quad Split Output



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### GETTING STARTED

#### Warranty Information

Laird warrants your product to be free from malfunctions and defects in both materials and workmanship for one year from the date of purchase. Please see the enclosed warranty card for full details or your local dealer or Distributor for questions concerning the warranty.

#### Technical Support

Laird maintains a free user support web site to help with all of your technical support needs. Visit: <http://laird-support.com/>

#### Unpacking the LTM-4DV

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipments.
- Review the contents of this instruction manual.

In addition to the unit itself, the package should also contain:

- AC Adaptor 12 V, 4 Pin XLR
- 2 - Power Line Cables - USA/Euro
- Warranty Card
- This Manual

### GENERAL DESCRIPTION

#### The Ultimate Digital Video Control Room Head End!

Today's complex broadcast environments are faced with handling multiple streams of Digital Video (DV) coming into their control centers and edit suites.

The Laird 4DV is the broadcaster's answer to managing & monitoring four (4) incoming DV feeds by converting the DV signal to high quality analog outputs. Another important feature of the 4DV is the Quad-Split monitoring output, which allows the broadcaster to see all four incoming video streams on one monitor.

The beauty of the 4DV is taming the interface and cable confusion involved in four separate DV media converters and a quad-splitter. The 4DV brings it all together in one precision engineered 2RU rack cabinet.

The 4DV is a new entry into the Laird family of DV production equipment for broadcasters.

### SPECIFICATIONS

#### INPUTS PER CHANNEL (4-Channels)

**DV INPUT:** 4x 6-Pin IEEE1394 100Mbps FireWire® Connector  
**DV OUTPUT:** 3x per each input - 6-Pin IEEE1394 100Mbps FireWire® Connector

#### OUTPUTS PER CHANNEL (4-Channels)

**ANALOG VIDEO OUT:** Composite Video: 1Vp-p into 75Ω: BNC  
**(PAL or NTSC)** YC (S-Video): 1Vp-p Y into 75Ω: 4 Pin Din  
 .7Vp-p C into 75Ω  
**ANALOG AUDIO OUT:** Unbalanced 2-Channel Monitor Audio Outputs

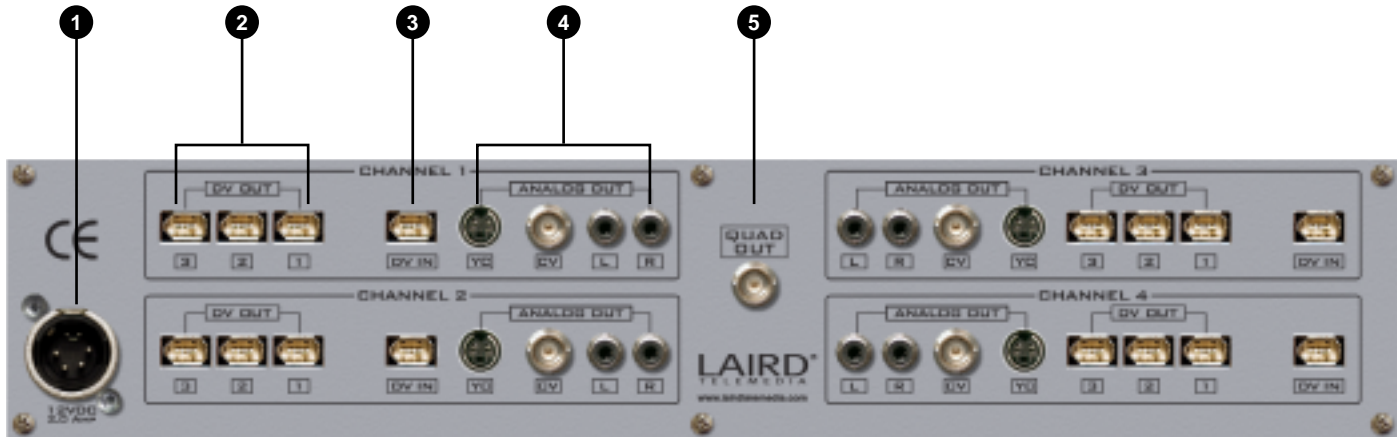
#### QUAD OUTPUT:

**FRONT PANEL:** 1x Composite Video: 1Vp-p into 75Ω: BNC  
**POWER:** Power 12V, 2 Amps DC. 110/220 50-60 Hz Adapter Included.  
**DIMENSIONS:** 3.5" H x 19" W x 12" D 1RU rackmount  
**WEIGHT:** 3.7 LBS



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\*Note: For purposes of clarification, the rear panel information below shows only Channel 1 of the Four Channels of the LTM-4DV. All channels are identical in operation.

### REAR PANEL CONNECTIONS

- 1 Power Input:** 12V DC, 4.0 Amp regulated input. 110/220 50~60Hz switching power supply included.
- 2 DV Out - CH-1:\*** 3 IEEE 1394 FireWire Repeated 100 Mbs outputs (for media DV applications only).
- 3 DV In - CH-1:\*** IEEE 1394 FireWire 100 Mbs input (for media DV applications only).
- 4 Analog Out - CH-1:\***

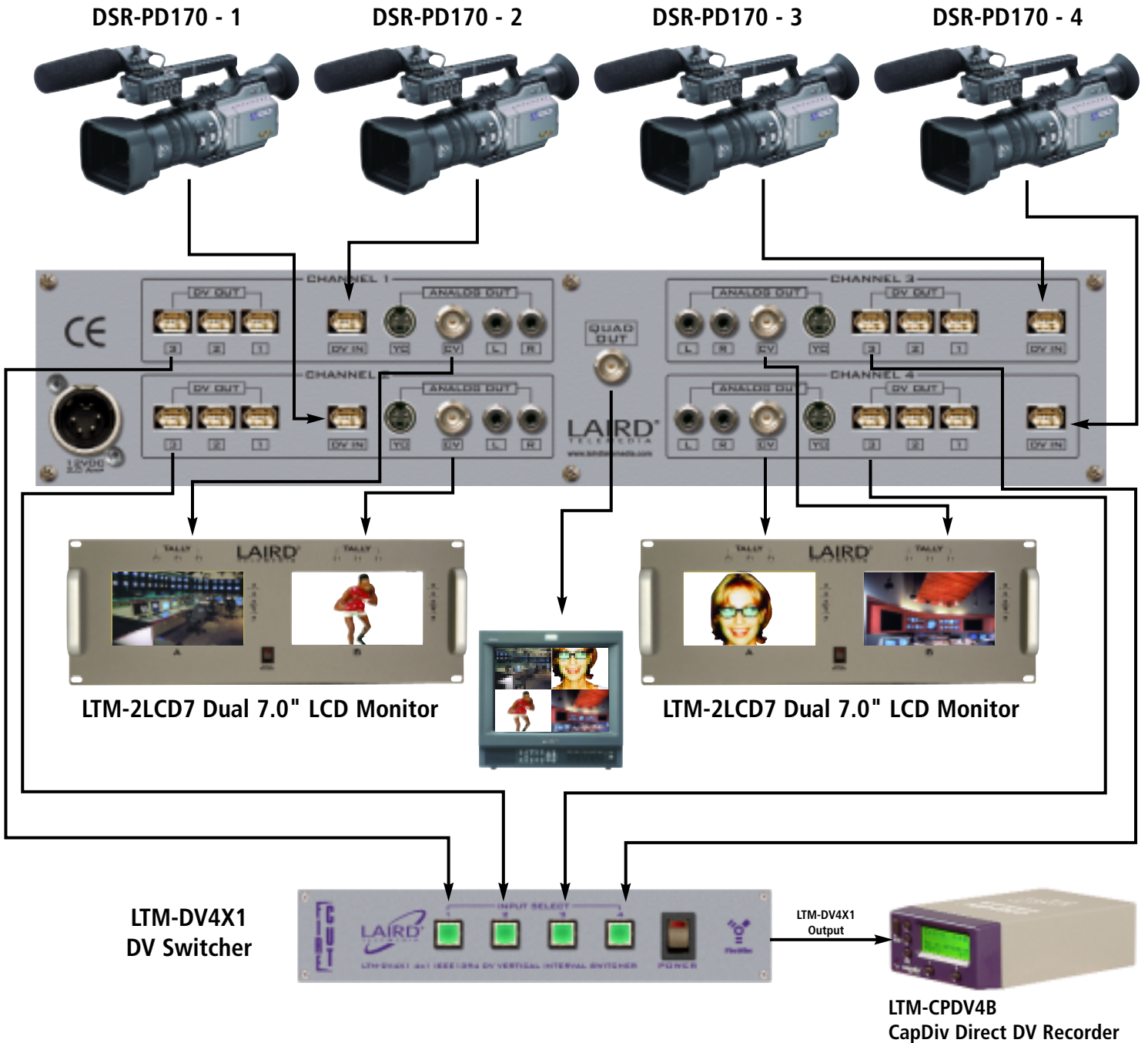
**Decoded Signals from Each IEEE 1394 DV Input (Per Input Channel)**  
 YC: YC (S-Video) 4 Pin Din: 1Vp-p Y into 75Ω / .7Vp-p C into 75Ω  
 CV: Composite Video: 1Vp-p into 75Ω: BNC  
 L-R Audio: Unbalanced 2-Channel Monitor Audio Outputs 1.97Vp-p : RCA
- 5 Quad Out:** Quad Split Output - Composite Video on BNC, 1Vp-p into 75Ω  
Scaled Quad Image Combined from Each IEEE 1394 DV Input



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### TYPICAL 4-CAMERA STUDIO APPLICATION DIAGRAM





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### OPERATIONAL NOTES FOR THIS PRODUCT AND IEEE 1394

This product is designed to operate with DV imaging devices such as cameras, DVCAMs, DV VTRs. It is not designed to work with hard drives and other peripherals that are computer based interfaces. Only one DV Equipped PC may be used Per Channel.

A Few Notes About DV technology: Before you use your DV signal distribution amplifier, it would be wise to study a bit about the technology. This will help you to understand the basics of the technology as it relates to your applications and requirements.

#### Defining the terms:

**IEEE1394** - This term refers to the data transfer protocol standard similar to USB, for computers and related media equipment. It is designed for "short haul" applications and was developed originally by Apple and called Firewire. It is a true Arbitrated session-oriented network integration technology. Various manufacturers have adopted this protocol for digital I/O on their equipment. Although it may be called different trade names such as I-Link, which is Sony's name for 1394.

**DV**- Digital Video which uses IEEE1394 for transfer. Often confused with IEEE1394 or Firewire, the fact is that DV is just one of many possible signals that takes advantage of 1394(Firewire) transfer protocol. This is due in part to the relative friendly packeting similarities that DV and 1394 have, which require lesser emulation and conversion for protocol compliance. DV in its native format is a compressed audio/video signal at about 5:1 compression with 4:1:1 or 4:2:0 sampling. Often referred to as DV25, this format also passes machine control and time code on compatible equipment.

**Hot-swap**- This refers to the ability to remove or switch a DV device without exiting the software running the device. 1394 is a managed peripheral system and cannot be hot-swapped or cold-switched unless the software and hardware is designed for this. If you simply switch away or to a running DV device such as a NLE or any computer involved in DV operations, the PC may "hang-up" or "crash" as the port reports the loss of duplex operations to the system. In most cases it is safer to simply switch to the device required, then enable the software. The same should be followed for switching from a device.

**Differences in DV equipment- There are several 1394 based systems that are not compatible with each other.**

**DVCAM** –Sony's DV based system using 28.22mm/Sec tape speed and a 15micron track pitch.

**DVCPRO** –Panasonic/s DV based system intended for broadcasters using a tape speed of 33.82mm/Sec with a pitch of 18microns. Older DVCPRO equipment is not compatible with standard DVCAM or for that matter any other DV format. Recent Sony equipment such as the DSR2000 does however playback DVCPRO tapes. Older DVCPRO equipment needs an upgrade to playback DVCAM tapes.

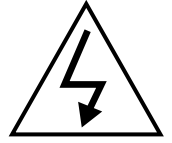


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# Safety Precautions



1. To prevent fire or shock hazard, do not expose this equipment to the environment of Humidity and/or dust. Do not use this equipment in an unprotected outdoor installation or any area classified as a wet area.
2. The operating temperature of this product must be kept between -40°C and +95°C. Direct sunlight or an intense source of heat, direct or ambient, must not be introduced to the product either by induction or contact.
3. Always keep the product on a stable and secure base or enclosure. Do not drop the product or subject it to sudden heavy impact.
4. Provide adequate ventilation so that thermal characteristics do not cause an increase in product temperature to resulting in overheating.
5. Do not clean the unit by using electrically conductive or corrosive chemicals. Always be certain to unplug the unit from AC wall power before any major cleaning. Use a damp cloth only for cleaning.
6. Do not subject the product to electrical mains power over voltage: The product must be used at the rated supply voltages indicated on the product rear panel only.
7. Do not plug the product into an overloaded electrical outlet. This may result in fire or electrical shock.
8. Object Ingress and Liquid Entry: Never insert or push sharp metal objects into the product or use such devices for an attempt at opening or servicing the product. Servicing should be referred to a trained and qualified technician only. Do not allow liquid of any type to enter the unit. Do not allow the unit to be submersed in water as this may cause a shock hazard.
9. A trained qualified technician should perform all servicing of the unit. There are no serviceable components within the unit for user access.



All Laird Products are Manufactured in the USA by Laird Telemedia, Mount Marion, NY



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