



# RL-2

Mechanical Relay Bypass Unit.

**user manual**

# Table of Contents

1 System overview .....	4
1.1 Applications for the RL-2.....	4
1.2 Technical overview of the RL-2.....	4
1.3 Associated Equipment for the RL-2 .....	5
1.3.1 Chassis Types .....	6
2 Installation .....	7
2.1 Installation of the RL-2 product .....	7
2.2 Installing the RL-2 into a flexiBox.....	7
2.3 Connecting to an RL-2.....	7
3 Technical Appendix.....	8
3.1 Technical Specification for the RL-2D.....	8

# Table of Figures

Figure 1-1 RL-2 PCB.....	4
Figure 1-2 BNC Connections of RL-2 Card.....	4
Figure 1-3 Relay Bypass System Diagram.....	5
Figure 1-4 FlexiBox with flexiPanel fitted.....	6

# I System overview

The RL-2 card is designed to provide a power failure bypass SDI route for eyeheight system processing modules such as legalisers, Keyers, Mixers or any other processing equipment that would break a signal chain if the power were removed.

The main features of the RL-2 are as follows:

- Reliable High Quality relay used for mechanical bypass
- Small path lengths and relay give good frequency response to 300MHz

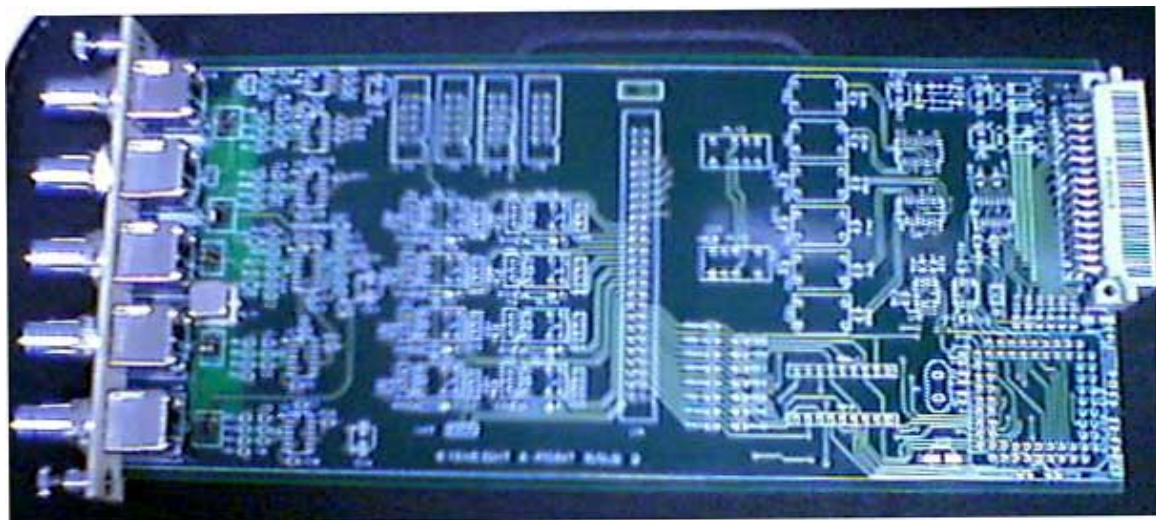


Figure 1-1 RL-2 PCB.

## I.1 Applications for the RL-2

Applications for the RL-2 include the following:

- Emergency Power Fail Bypass

## I.2 Technical overview of the RL-2

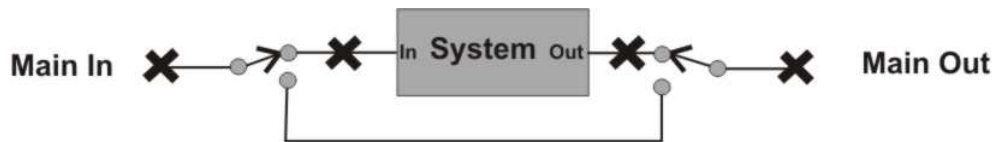
The RL-2 card provides a power-fail bypass route for a one input, one output system.



Figure 1-2 BNC Connections of RL-2 Card

The above connections are represented in the system diagram below. As can be seen by this system there are two relay positions. The power ON condition is shown below. In the Power off situation the relays move to the “other” contact and the system is bypassed.

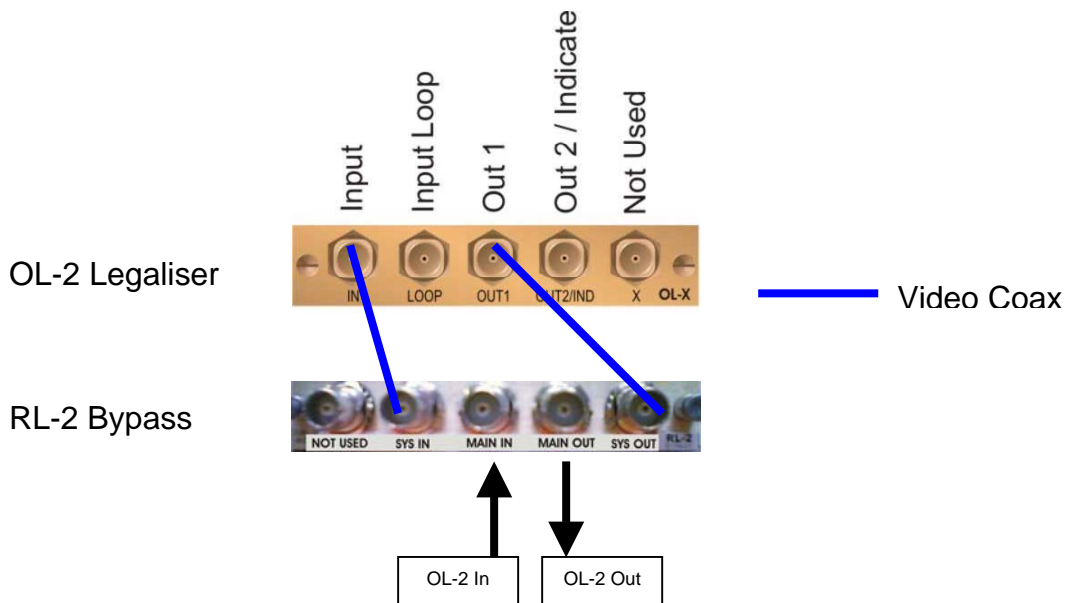
For this system to be effective the Relay card (RL-2) must be located in the same chassis as the system.



**X BNC Connection**

**Figure 1-3 Relay Bypass System Diagram**

An example below is shown where the relay card is used to bypass an eyeheight OL-2 legaliser.



In the event of a power failure of the chassis “Main In” will be directly routed to “Main out”

### **I.3 Associated Equipment for the RL-2**

The RL-2 is a module and requires a chassis to function.

### I.3.1 Chassis Types

- **flexiBox** is a 1RU chassis. The order code is FB-9. This will hold a maximum of 6 RL-2 Modules with “Hot Swap” redundant PSU option and “Hot Swap” RL-2 modules.
- **maxiBox** is an alternative low cost 1RU chassis. The order code is MX-9. This also will hold a maximum of 6 RL-2 modules but it has no redundant PSU option and the RL-2 units must be factory fitted.



**Figure 1-4 FlexiBox with flexiPanel fitted**

# 2 Installation

## 2.1 Installation of the RL-2 product

If this unit is already pre-installed in a flexiBox (FB-9), or a maxiBox, with either a local or a remote panel from the factory then refer to the "Hardware Installation Guide" which will be enclosed with the system. If this unit has been ordered separately, we assume here that you already have a flexiBox system with a Flexipanel and that the flexiBox has at least one spare slot for the RL-2 card.

## 2.2 Installing the RL-2 into a flexiBox

To install the RL-2 into a flexiBox it is desirable (but not necessary) to power down the flexiBox. Follow these instructions.

On the rear of the flexiBox are 6 slots for Products. Remove any spare blanking plate. There are 2 off M2.5 Screws, which require unfastening for each blanking plate.

Slide the Product PCB into the spare slot and firmly push it "home".

Use the two thumbscrews to fasten the unit in place.

## 2.3 Connecting to an RL-2.

The connections for the RL-2 are shown below. The BNC's are configurable with links on the I/O card.

<b>BNC, numbered from left to right.</b>	<b>Function of connection (RL-2).</b>
1	NOT USED
2	System Input of apparatus that requires power fail protection.
3	New Main apparatus input with relay bypass.
4	New Main apparatus output with relay bypass.
5	System Output of apparatus that requires power fail protection.

# 3 Technical Appendix

## 3.1 Technical Specification for the RL-2D

Number of Inputs	2, SDI 270Mbit inputs
Number of Outputs	2, SDI 270Mbit inputs
SDI Output Jitter	The system will add less than 0.2UI to the input Jitter. (This is only guaranteed on issue 2 or later cards)
Current Consumption	<100mA at +5V
Size	215mm by 100mm

The Default jumper positions for correct operation of the relay bypass card are shown below. These jumpers are all next to the BNC connections.

Jumper	Default Jumper Position
J10	No Jumper
J8	Jumper 1 to 2
J7	Jumper 1 to 2
J2	Jumper 2 to 3
J5	Jumper 1 to 2