

# **R44E 4-Channel Monitoring Encoder R-series Card Module User Manual**



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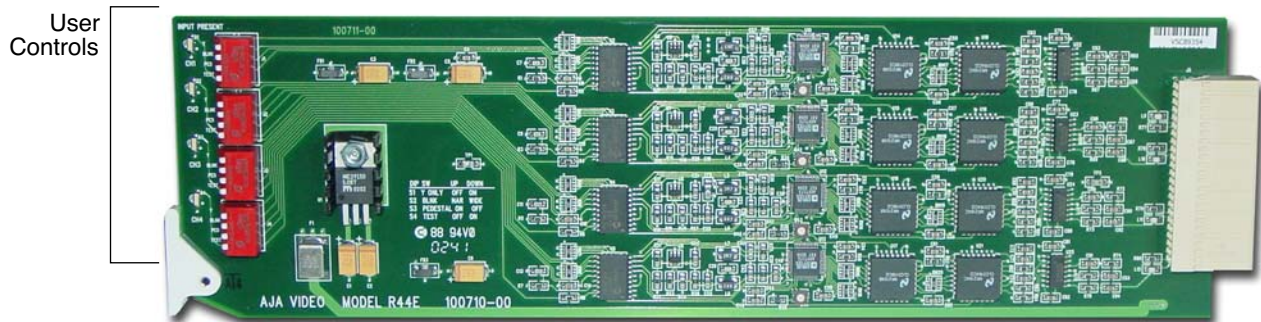
## Introduction

The AJA R44E Serial Digital Video Encoder provides four channels of low-cost all-digital encoding of 4:2:2 component serial digital to analog NTSC or PAL. You can use the R44E for monitoring, level/phase checking, check dubs, or desk-top video applications.

The R44E provides one analog output for each serial digital input channel. Each channel has a separate D/A converter with a 10-bit DAC and 8-bit broadcast encoding. Each output can be switched to a Y (luminance) output by making a dip switch selection. The R44E automatically configures to 525 or 625 line component digital inputs and then outputs analog NTSC (525 line input) or PAL (625 line input). All four channels have completely independent configuration and format standards selections. The R44E encodes the full dynamic range of input component video—values below black and above white are not clipped.

In NTSC mode, the 7.5 IRE pedestal can be disabled by dip switch selection. The R44E also provides an internally generated 75% Color Bars test signal for each channel, available via dip switch selection.

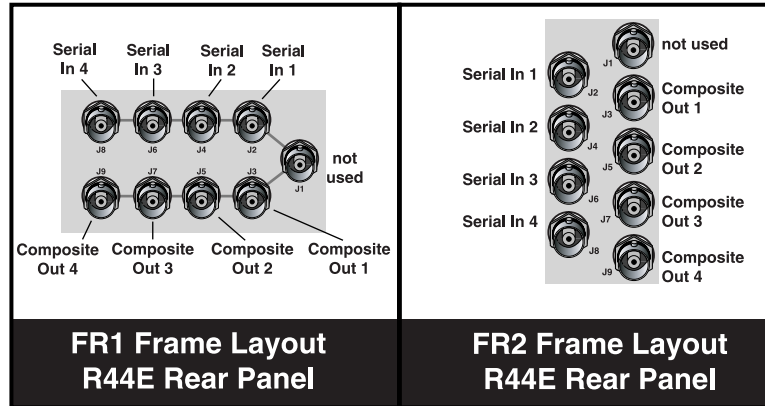
## Features



### *R44E Card Module, Side View*

- 4 Channels of SDI (SMPTE 259M) Inputs, 4 x BNC
- Fits AJA R-Series Frames. Also compatible with Leitch 6800 Series Frames.
- 4 NTSC/PAL outputs, 4 x BNC
- User configurable by 4 dipswitches (separate controls for each channel)
- Composite/Y output configurable
- Pedestal
- H/V Blanking
- +/- .25 dB to 5 MHz frequency response

## I/O Connections

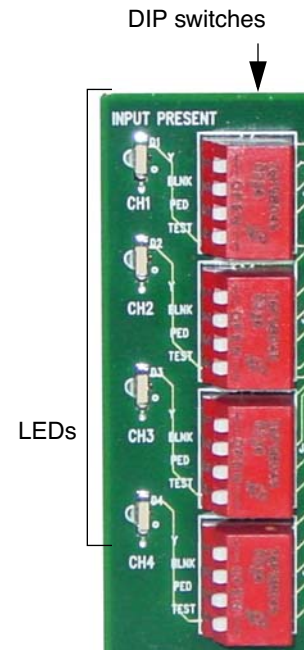


*FR1 and FR2 BNC Connector Assignments, R44E Card Module*

When the R44E module is installed in an AJA FR1 or FR2 frame, a corresponding group of 9 BNCs on the rear panel then provide I/O for the module. The illustration above shows the connector assignments for both the FR1 and FR2 when used with the R44E.

## User Controls

The user interface for the R44E includes four 4-position dipswitches and four status LEDs. Each LED illuminates when an SDI input signal is detected at its respective channel. The dipswitches are used to configure output format, blanking, pedestal and select color bars for testing. The following table under “*Control Functions*” shows what each of the four dipswitch positions perform. All dipswitches function identically for their respective channels. The channel number is marked on the front of the circuit card next to each dipswitch and LED.



## Control Functions

Switch Position	Function
S1 Y/C:	ON (Down): output is Y (luminance) OFF (Up): output is composite (NTSC or PAL)
S2 BLNK:	NAR (Up): Vertical (line numbers indicate where video starts) line 13, field 1; line 12, field 2 (525 line) <sup>32</sup> line 10, field 1; line 322, field 2 (625 line) Horizontal (active video line durations) ITU-R.470 (720 pixels PAL/NTSC)  WIDE (Down): Vertical (line numbers indicate where video starts) line 22, field 1; line 21, field 2 (525 line) line 23, field 1; line 335, field 2 (625 line) <sup>32</sup> Horizontal (active video line durations) ITU-R/SMPTE (710 pixels NTSC, 702 pixels PAL)
S3 PEDESTAL:	ON (Up): 7.5 IRE pedestal for NTSC OFF (Down): No pedestal NOTE: this has no effect with 625 input
S4 TEST:	ON (Down): Internal 75% Color Bars test pattern output OFF (Up): Normal operation

## Installation

Typically, R44E installation consists of the following:

1. disconnect power from the frame (remove line cord)
2. remove the FR1/FR2 front panel
3. install R44E card module
4. apply power to the frame by connecting a north american-style power cord from the frame to mains power (90 to 260 VAC)

Instructions for removing the frame front door for module installation is discussed in the *FR1/FR2 User Manual*.

## Specifications

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<b>Item</b>	<b>Specification</b>
Input Format:	SMPTE 259 / ITU-R-601 Serial Digital Component
Output Format:	NTSC/PAL. All outputs are separately buffered.
Input:	SMPTE 259 / ITU-R-601 Serial Digital Component
Channels:	4
Differential Gain:	<1.5%
Differential Phase:	<1.5 degree
FrequencyResponse:	+/- 0.25dB to 5MHz (Y)
2T K factor:	<1% (Y)
D/A Converters:	10 bits
Encoder:	8 bits
Output level Adjustment:	Internal, +/-20%
Power Consumption:	+6.5 Volts/8.5 Watts, -6.5 Volts/0 Watts