

## TXC-2114

TRANSCODER  
COMPONENT TO NTSC / YC



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# TXC-2114 TRANSCODER COMPONENT TO NTSC / YC

## GENERAL:

The TXC-2114 transcoder is designed to provide an NTSC and YC output from a component video source. The Component video source signals connect to the BNCs labeled "R-Y IN, Y IN, and B-Y IN". The three input BNCs are terminated into a 75Ω load on model TXC-2114. The outputs are provided on the BNC labeled "NTSC" and the 4 Pin miniature circular connector labeled "YC".

The looping input version, TXC-2114L, is for applications where the source signal must loop to several devices. This requires an additional card slot in the frame for mounting the module. The TXC-2114L requires termination of the input signals to be provided by an external 75Ω load.

The input coupling method may be set to AC or DC. The input signal format is selected for either SMPTE / MII or BETA levels via a jumper on the PCB. Additional selections for subcarrier phase, horizontal phase lock loop and synchronization modes allow for stable operation in various system configurations.

This module must be installed in a Sigma module mounting frame for proper operation. Power is provided by the power supply within the module mounting frame. A Sigma frame is designed to accommodate any 2100 Series module. This allows the TXC-2114 to be resident with any other Sigma 2100 Series module in a common frame.

## POWER:

The TXC-2114 operates from bus voltages of unregulated +20 VDC and -20 VDC. These voltages are supplied by the Sigma frame / power supply. The modules use three pin regulators to regulate the bus voltages to +5 VDC via U18, -5 VDC via U17, +12 VDC via U15 and -12 VDC via U16. Circuit protection is provided by PTC Thermistors (Positive Temperature Coefficient Thermal Resistor) which open the current path during an excessive current draw condition. Serving as a permanent fuse the PTC Thermistor will reset upon correction of the fault.

## FRAMES:

The TXC-2114 module can reside in any of five different frames provided by Sigma Electronics, Inc. If this module is purchased as a component of a system, please refer to the SERIES 2100 FRAMES Instruction Manual. If the module was purchased separately, an existing frame must be present for proper operation. Sigma would like to emphasize the fact that any of the Series 2100 modules can be mixed in any frame.

- ◆ When assembled in the SSB-21 Stand-Alone Box, it is assigned the model number TXC-2614. This is a single slot desk top box. The looping version TXC-2114L consumes two card slots and is not compatible with the SSB-21.
- ◆ The SS-2100-2 frame is also designed for desk top applications. This frame provides two (2) slots for dual module configurations or a single TXC-2114L.
- ◆ The SS-2100-6 frame is designed for 19 inch EIA rack installations. It provides six (6) slots for modules in 1 RU.
- ◆ The SS-2100-12 frame provides a redundant power supply for installations in a 19 inch EIA rack. This frame provides twelve (12) slots for modules within 3 RU.
- ◆ The SS-2100-16 frame is also available for installations in a 19 inch EIA rack. This frame provides sixteen (16) slots for modules within 3 RU.

Additional information on the various frames is available. Please refer to the section on frames within the system manual if this was purchased as a complete system. If this information is not provided with this shipment, contact Sigma Electronics for assistance.

## CONNECTIONS:

Wiring to the module is performed via BNCs and a 4 Pin miniature circular connector. Diagrams to show the physical layout of connection to the YC jack and rear panel connectors are provided in Figures 1 and 2 .

**INPUT:** There are three BNC input connectors each marked with the appropriate component name. The inputs are terminated on model TXC-2114.

Model TXC-2114L is a high impedance loop through configuration (not shown). This allows the Component source signal to loop to other units. To ensure proper impedance matching it is necessary to terminate the input with a 75Ω load at the end of line.

**OUTPUT:** There are two output connectors. The BNC provides NTSC formatted composite video and the 4 Pin connector provides NTSC formatted YC video. Both outputs are active at the same time which allows the common output video signal on both connectors to be applied to a composite and YC (SVHS) destination simultaneously.

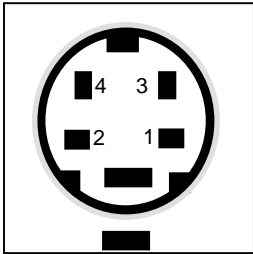
Refer to the drawings for signal connections.

(Cont.)

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## CONNECTIONS (cont.):

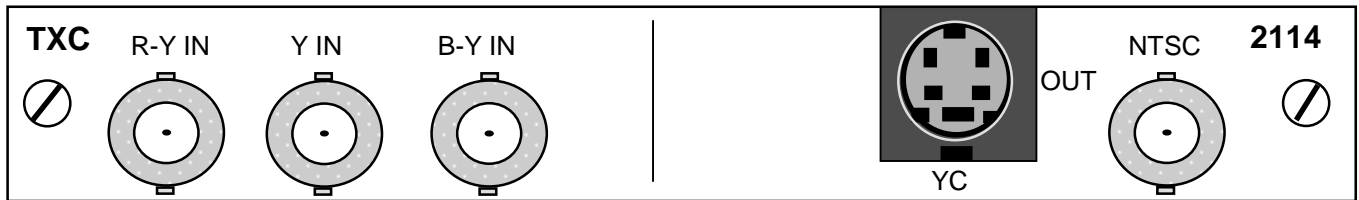
The pinouts for the YC connector are industry standard with the following configuration.



YC Connector  
Figure 1

Pin	Function
1	Luminance Common
2	Chroma Common
3	Luminance Signal
4	Chroma Signal

Diagram shows pin configuration as viewed on the rear panel of the TXC-2114.



REAR PANEL CONNECTIONS  
Figure 2

## ADJUSTMENTS:

The following adjustments and jumpers are provided for custom conditions. All modules are set for optimum performance by Sigma Electronics. If necessary, the listed parameters may be readjusted.

- C44: ... Frequency Response for luminance channel.
- C89: ... Subcarrier Null adjust, 1 of 3 adjustment controls.
- C90: ... Subcarrier Null adjust, 1 of 3 adjustment controls.
- C91: ... Burst Amplitude Adjustment.

S1: ..... Subcarrier Phase Shift switch, 0°/180°

- R12: ... R-Y Gain adjustment, SMPTE/MII format.
- R13: ... B-Y Gain adjustment, SMPTE/MII format.
- R14: ... R-Y Gain adjustment, Beta format.
- R18: ... B-Y Gain adjustment, Beta format.
- R19: ... Y Gain adjustment, all formats.
- R20: ... Chroma Output Gain adjustment.
- R48: ... Subcarrier Phase Shift adjustment.
- R51: ... Subcarrier Symmetry adjustment.
- R52: ... Subcarrier Null adjust, 1 of 3 adjustment controls.
- R53: ... Horizontal Synchronization Timing adjustment

- J1: ..... R-Y Input Format jumper, SMPTE/MII or Beta
- J2: ..... B-Y Input Format jumper, SMPTE/MII or Beta
- J3: ..... R-Y Input Coupling Method, AC or DC.
- J4: ..... B-Y Input Coupling Method, AC or DC.
- J5: ..... Y Input Coupling Method, AC or DC.
- J6: ..... Subcarrier/Inverse Subcarrier selector for best Subcarrier Null operation.
- J7: ..... Horizontal PLL Startup, Fast or Slow selection.
- J8: ..... Synchronization selection, Direct or AFC

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## SPECIFICATIONS:

### VIDEO:

INPUT TXC-2114: ..... 1, single-ended, terminated, 1Vp-p maximum, B-Y, R-Y, Y  
INPUT TXC-2114L: ..... 1, looping, 1Vp-p maximum, B-Y, R-Y, Y  
RETURN LOSS: ..... >30 dB to 6 MHz  
DC OFFSET: ..... <±50 mV  
FREQUENCY RESPONSE: ..... +2%, -4% to 6 MHz  
DIFFERENTIAL PHASE: ..... < 0.5°  
DIFFERENTIAL GAIN: ..... < 0.5%  
BANDWIDTH: ..... 12 MHz  
ACCURACY: ..... ±2.5 IRE, ±2.5°  
TILT, FIELD & LINE: ..... ± 1%  
DELAY: ..... 230 ± 30 nsec  
YC OUTPUT: ..... 1, 1Vp-p maximum (±10%)  
NTSC OUTPUT: ..... 1, 1Vp-p maximum (±10%)

### GENERAL:

OPERATIONAL TEMP.: ..... +32° to +122° F (0° to +50° C)  
SIZE TXC-2114: ..... 1 Card Slot in Sigma module frame  
SIZE TXC-2114L: ..... 2 Card Slots in Sigma module frame  
CONNECTORS: ..... Y,R-Y,B-Y Inputs, BNC  
Composite Output, BNC  
YC Output, 4 Pin Miniature Circular connector.

## TECHNICAL MANUAL:

A manual including schematics, circuit description, parts list and setup guide is available upon request. This information is intended for the service of the module. Modules should be serviced by Qualified Personnel only ! Sigma Electronics, Inc. recommends service to be performed by our Factory Service Center.

All specifications, drawings, dimensions, weights and other details are subject to change without notification. Information is intended to give a general performance and operation guideline of the product.

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