



Totally Logical

Z86129/130/131 NTSC LINE 21 DECODER

FEATURES

Devices	Speed (MHz)	Pin Count/ Package Types	Standard Temp. Range	On-Screen Display	Automatic Data Extraction	
				& Closed Captioning	V-Chip	Time of Day
Z86129	12	18-Pin DIP, SOIC	0° to +70°C	Yes	Yes	Yes
Z86130	12	18-Pin DIP, SOIC	0° to +70°C	No	Yes*	Yes*
Z86131	12	18-Pin DIP, SOIC	0° to +70°C	No	No	Yes

Note: *The Z86130 recovers the line 21 data in both of field1 and field2. It also has V-Chip-specific registers and the output (pin-13) to control program blocking with minimal communications between the Z86130 and the host processor.

- Complete Stand-Alone Line 21 Decoder for Closed-Captions and Extended Data Services (XDS).
- Preprogrammed to Provide Full Compliance with EIA-608 Specifications for Extended Data Services.
- Automatic Extraction and Serial Output of Special XDS Packets such as Time of Day, Local Time Zone, and Program Blocking (*V-Chip*).
- Cost-Effective Solution for NTSC Violence Blocking inside Picture-in-Picture (PiP) Windows.
- Minimal Communications and Control Overhead Provides Simple Implementation of Violence Blocking, Closed Captioning, and Auto Clock Set Features.
- Programmable, Full Screen On-Screen Display (OSD) for Creating OSD or Captions inside a Picture-in-Picture (PiP) Window (Z86129 only).
- I²C Serial Data and Control Communication
- User-Programmable Horizontal Display Position for easy OSD Centering and Adjustment (Z86129 only).

GENERAL DESCRIPTION

The Z86129/130/131 is a stand-alone integrated circuit, capable of processing Vertical Blanking Interval (VBI) data from both fields of the video frame in data conforming to the transmission format defined in the Television Decoder Circuits Act of 1990 and in accordance with the Electronics Industry Association specification 608 (EIA-608).

The Line 21 data stream can consist of data from several data channels multiplexed together. Field 1 has four data channels: two Captions and two Text. Field 2 has five additional data channels: two Captions, two Text and Extended Data Services (XDS). XDS data structure is defined in EIA-608. The Z86129 can recover and display data transmitted on any of these nine data channels. The Z86130 and Z86131 are derivatives of the Z86129. The Z86130 and Z86131 do not have OSD capability, but are ideally suited for Line 21 data slicer applications.

The Z86129/130/131 can recover and output to a host processor via the I²C serial bus the recovered XDS data packet defined in EIA-608 as it is defined in the table above (Z86130 provides the raw Line 21 data, which must be decoded properly for the applications). On-chip XDS filters in Z86129 is fully programmable, enabling recovery of only those XDS data packets selected by the user. The Z86131 is designed especially for extracting XDS time information with proper XDS filter setup for Automatic Clock-Set features in TVs, VCRs, and Set-Top boxes. And the Z86130 is designed especially for V-Chip and Line 21 data recovery.

In addition, the Z86129/130 is ideally suited to monitor Line 21 of video displayed in a PiP window for violence blocking purposes. A block diagram of the Z86129/130/131 is illustrated in Figures 1 and 2.