

Auto Changeover



LT 444

- 11 User Configurable Channels
- Selectable Delay Time for Monitor Start
- Selectable Determination Criteria of the Signal Level
- Multiformat Supports HD-SDI, SD-SDI, AES/EBU Digital Audio, HD Analog Tri-Level Sync, NTSC or PAL Analog Black Burst
- Fault Channel 1-11 LED Indicators
- Sync Source Primary or Backup
- Auto Switching on Fault or Manual
- Fault Indicators and Reset for Primary and Backup
- Keylock Automatic Operation after 60 seconds

The LT 444 is a changeover unit that automatically switches from primary signals to the backup system signal when errors are detected. Normal operation will automatically switch the output signal from the primary channel to the backup channel when problems are detected in the primary signal. Additionally, the switching mode can be defined to switch as either automatic or by manual operation.

Primary and backup system input signals are connected to each channel for detection of errors based on the specific amplitude of the primary input signal. Multiformat operation is facilitated through the setting of the internal configuration DIP switches. One changeover provides eleven multiformat channels covering HD-SDI (channels 1 to 6 only), SD-SDI, AES/EBU digital audio, analog black burst signal (PAL or NTSC), and tri-level sync signals.

The delay for starting the error monitor at power up can be set to FAST or SLOW depending on the rise time of the system signal source being monitored. If a switch occurs from the primary signal to the backup signal, the channel that caused the problem is indicated on the front panel LED.

The LT 444 can be configured in the system with a pair of the LT 443D Multiformat Video Generators.

Key Specifications

Inputs

Primary Inputs

1 Input each for 11 channels
 (75 Ω BNC connector)

Backup Inputs

1 Input each for 11 channels
 (75 Ω BNC connector)

Outputs

1 output each for 11 channels
 (75 Ω BNC connector)

Input/Output Characteristics

(Ch 1 to Ch 11)

Return Loss

30 dB 0 to 10 MHz
 15 dB 10 MHz to 750 MHz
 10 dB 750 MHz to 1.5 GHz

Insertion Loss

0.2 dB 0 to 10 MHz
 0.5 dB 10 MHz to 200 MHz
 2.0 dB 200 MHz to 1.5 GHz

Cross Talk

-60 dB 0 to 10 MHz
 -30 dB 10 MHz to 1.0 GHz
 -20 dB 1.0 GHz to 1.5 GHz

Delay for Starting the Monitor

Select from two delay settings for starting the error monitor at power up according to the rise time of the system signal source connected to the LT 444.

Fast

1 Minute or more (60 to 80 s)

Slow

4 Minutes or more (240 to 320 s)

Input Signal Type

Set the type of input signal applied to the LT 444 using the internal dip switch

Signal Type

HD-SDI (Ch1 to Ch6 only)
 SD-SDI (270 Mb/s)
 SD-SDI (143 Mb/s)
 AES/EBU digital audio
 Tri-level sync signal
 NTSC black burst
 PAL black burst

Determination Criteria of Signal Level

Detection Level

Detects an error when the amplitude of the input signal drops by 2 to 5 dB from the defined level and makes the switch.

The detection level varies slightly depending on the type of signal specified using the internal dip switches.

The detection level can be set to LOW or HIGH for each signal type.

Detection Reference Level

*1 Signal levels inside the parenthesis are those during normal conditions.

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Key Specifications Cont'

When Determination Criterial is set LOW

HD-SDI (Ch 1 to Ch6 only):	450 to 635 mV (800 mV)
SD-SDI (270 Mb/s):	450 to 635 mV (800 mV)
SD-SDI (143 Mb/s):	450 to 635 mV (800 mV)
AES/EBU digital audio:	631 to 794 mV (1000 mV)
NTSC black burst:	-180 to -227 mV (-286 mV)
PAL black burst:	-190 to -238 mV (-300 mV)
Tri-level sync:	337 tp 476 mV (600 mV)

When determination Criteria is set to HIGH

HD-SDI (Ch1 to Ch6 only):	505 to 713 mV (800 mV)
SD-SDI (270 Mb/s):	505 to 713 mV (800 mV)
SD-SDI (143 Mb/s):	505 to 713 mV (800 mV)
AES/EBU digital audio:	734 to 924 mV (1000 mV)
NTSC black burst:	-210 to -264 mV (-286 mV)
PAL black burst:	-220 to -277 mV (-300 mV)
Tri-level sync signal:	379 to 535 mV (600 mV)

User-Defined Detection Level Setting (Ch7 to Ch11 only)

User Setting 1: Set Between -100 mV to -700 mV *2

User Setting 2: Set Between -100 mV to -700 mV *2

Expansion of Detection Level using Attenuator (Ch 7 to Ch11 only)

Set the internal attenuator to expand the detection level futher by 5 times.

User Setting 1: Set Between -700 mV to -3500 mV *2

User Setting 2: Set Between -700 mV to -3500 mV *2

*2 When a signal equivalent to the H. SYNC waveform is applied.

The specifications of the detection level may not be achieved depending on the waveform shape.

Error Dispaly

Total Error LED

Notifies errors by illuminating the error LED on the front panel.

Fault Channel LED

Detects the channel causing the error and notifies the channel by illuminating the corresponding LED.

Panel Key Lock

Time to Key Lock

The key lock is automatically enabled when key operation is not detected for 60 s.

External Control (REMOTE) Connector

Application

For external remote control

Inputs

RESET,AUTO SWITCHING, and TOGGLE SYNC

Outputs

FAULT and SYNC SOURCE

Connector Type

9 Pin D-Sub connector

Environmental Conditions

Operating Temperature

0 to 45° C

Operating Humidity

85 % RH (without condensation)

Spec Guaranteed Temperature

5 to 40° C

Spec Guaranteed Humidity

85 % RH (without condensation)

Operating Environment

Indoor Use

Operating Altitude

Up to 2,000 m

Overvoltage Category

II

Pollution Degree

2

Power Requirements

90 to 250 VAC (no switching necessary), 50/60 Hz
25 W max

Physical

Size (W x H x D)

16¾ x 1¾ x 22 in.

426 x 44 x 560 mm

(excluding protrusions)

Weight

8.8 lbx., 4 kg approx.

Supplied Accessories

Rack Support Ears (2)

Rack Support Attachment Screws (4)

Power Cord (1)

Instruction Manual (1)

Rear Panel

