



- **3 Independent Variable Black Burst Outputs**
- **SD-SDI Output and Analog Composite Outputs**
- **1U Half Rack Size Signal and Sync Generator**
- **Remote Control Software Supplied**

The LT 428 is a compact signal generator of half rack size. It is equipped with 3 independent black burst outputs, which facilitates the synchronization of digital devices that have different system time delays. Simultaneous outputs include NTSC or PAL as SDI and Analog, 3 independent black bursts and a word clock. Also, the rackmount is supplied as a standard accessory.

Features

• 3 Black Burst Outputs

Equipped with 3 independent black burst outputs, each black burst output can be separately adjusted.

• Genlock

Able to synchronize to the NTSC or PAL video signals, black burst, and composite sync, and vary the timing.

• SDI Output

Equipped with one system of component serial digital output conforming to SMPTE 259M.

• Analog Composite Output

Equipped with one system of analog composite output conforming to SMPTE and EBU standards.

• Digital Audio Output

Equipped with one system of 2-channel digital sound output conforming to AES/EBU.

• Analog Audio Output

Equipped with stereo sound output (The sound is output by switching with the digital sound).

• Word Clock Output

Equipped with one system of 44.1 kHz or 48 kHz word clock.

• Setup Using a PC

Since setting changes such as varying the phase of the black burst signal, genlock timing, video output pattern, and audio frequency are carried out from a PC via the RS-232C, errors in operation can be prevented.

LT428 Component Digital Sync Generator

Specifications

Remote Control Input Interface

RS-232C port, 9 pole D-sub, male

Analog Genlock

Genlock Signal (NTSC or PAL)

Amplitude: Nominally ± 3 dB

Input SCH Phase: Nominally $\pm 45^\circ$

Pull-in Range fsc: ± 50 Hz

Timing Facilities

Timing Range: PAL ± 4 fields; NTSC ± 2 fields

Timing Resolution: 0.5° at fsc

Timing Resolution

Analog Black Burst: 0.15 ns

Video: 37 ns

Analog Black Burst Outputs

Sync Amplitude: PAL -300 mV ± 2 %

NTSC -286 mV ± 2 %

Burst Amplitude: PAL 300 mV ± 2 %

NTSC 286 mV ± 2 %

Timing Range: PAL ± 4 fields ; NTSC ± 2 fields

Timing Resolution: 0.5° at fsc

SCH Phase: Default 0° , adjustment $\pm 180^\circ$,
resolution $< 1^\circ$

Video Signal Generator

SDI Output

Format: 270 Mb/s serial, complies with ITU-R
BT.656 and SMPTE 259M

Timing Range: PAL ± 1 field ; NTSC ± 1 field

Timing Resolution: 37 ns

Jitter: < 0.20 UI

Embedded Audio: 1 kHz stereo, silence and off

Video Output

Sync Amplitude: PAL -300 mV ± 2 %

NTSC -286 mV ± 2 %

Burst Amplitude: PAL 300 mV ± 2 %

NTSC 286 mV ± 2 %

Timing Range: PAL ± 1 field ; NTSC ± 1 field

Timing Resolution: 37 ns

SCH Phase: Default 0° , adjustment $\pm 180^\circ$,
resolution 1.4°

Common Test Signals, SDI and Analog Generator:

All signals in standard 4x3 aspect ratio.

Patterns dedicated for PAL: EBU Color Bar/75%

Patterns dedicated for NTSC: SMPTE Color Bar,

FCC Color Bar

Patterns common for NTSC/PAL: Color Bar

ITU801

AES/EBU Audio Generator

Output Format: Balanced 110 Ω according to AES3
1992

Amplitude: 3 Vp-p typically

Timing: + 10.4 ms to -9.6 ms in 0.8 ms steps

AES/EBU Output Signals

Tones: Stereo 1 kHz/etc

Click Rate: 1 or 3 s.

Levels: -18 dBFS/etc

Wordclock (WCLK) Generator

Output Impedance: 75 Ω

Output Characteristics: HC-MOS clock, 0 to 5 V
un-terminated

Reference Output: 44.1 or 48 kHz

Analog Audio Generator

Output Format: Balanced 30 Ω

Balanced by active circuitry.

Reference Amplitude: 0 dBu, corresponding to 775 mV

Analog Audio Output Signals

Tones: Stereo 500 Hz/Stereo 1 kHz/Stereo EBU
1 kHz, single click in ch. A/Stereo 8 kHz

Click Rate: 1 or 3 s.

Levels: 0 dBu/etc (0 dBu=775 mV)

Power Requirement

90 to 250 VAC 25 W max.

Mechanical Data

Mechanical Data for Cabinet

8¹⁷/₃₂ (W) x 1²¹/₃₂ (H) x 15 (D) in., 3.3 lbs.

217 (W) x 42 (H) x 380 (D) mm 1.5 kg

Mechanical Data for Cabinet fitted w/19" rackmount

18¹³/₃₂ (W) x 1³/₄ (H) x 15 (D) in., 5.1 lbs.

442 (W) x 44 (H) x 380 (D) mm 2.3 kg

Mechanical Data for Two Cabinets

Side by Side fitted with 19" rackmount

18¹³/₃₂ (W) x 1³/₄ (H) x 15 (D) in., 8.4 lbs.

442 (W) x 44 (H) x 380 (D) mm 3.8 kg

Rear Panel

