

LT443D-GL

Genlock Module

For LT443D

The LT443D-GL Genlock Module has an external reference loop through and a 3-system independent black signal generator. External analog reference inputs can be NTSC/PAL black burst, 14 formats of HDTV tri-level sync or 525p/625p sync. It can also output and accept black burst signals with the 10 field ID pulse as per SMPTE 318M for timing multiformat facilities. Output sync signals can be generated in 3-separate systems, as above, with independent timing. Both genlock and black sync timing have a ± 5 frame settable range for NTSC/PAL black burst and HDTV analog tri-level sync signal inputs.



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Specifications

Genlock

Loop-through Input: BNC 75 Ω

Return loss: ≥ 3 dB (≥ 0.3 MHz, ≤ 30 MHz)

Reference Signal Input

Tri-Level Sync for HDTV: SMPTE 240M/274M/296M

525p/625p Analog Sync: SMPTE 293M/ITU-R BT.1358

NTSC Black Burst: SMPTE 170M/312M/RP 154

PAL Black Burst: ITU-R BT.470-6

Reference Input Level

HDTV: Positive 300 mV, Negative -300 mV

525p/625p: -300 mV, NTSC: -286 mV,

PAL: -300 mV

External Lock Range: ± 10 ppm

Jitter: ≤ 0.5 degree (Burst Lock), ≤ 1 ns with (Sync Lock)

Mode Switch

INT/EXT: Select to Auto or Manual

Auto: EXT when sync reference is detected

INT when sync reference is absent

Manual: Mode is switched by INT/EXT menu (INT mode for absent reference)

Genlock

H-Phase (Fine): Throughout range of H-Phase (Coarse)

H-Phase (Coarse): $\pm 1/2$ Line with respect to input signal

Resolution: 0.0741 ms step

V-Phase: ± 1 field with respect to input signal in 1 line steps. ($\pm 1/2$ frame in case of progressive)

F-Phase: ± 5 Frame with respect to input signal in 1 frame steps.

NTSC BB Input, has same timing as line 1 NTSC and line 4 HDTV

Analog Sync Signal Output

Black 1 / Black 2 / Black 3

Standards:

Tri-Level Sync for HDTV: SMPTE 240M/274M/296M, 525p/625p

Analog Sync Signal: SMPTE 293M/ITU-R BT.1358

NTSC Black Burst Signal: SMPTE 170M/312M/RP 154

PAL Black Burst Signal: ITU-R BT.470-6

Sync Level (75 Ω)

HDTV: Pos. 300 mV ± 6 mV; Neg. -300 mV ± 6 mV

525p: -300 mV ± 6 mV; 625p: -300 mV ± 6 mV

NTSC: 40 IRE ± 1 IRE; PAL: -300 mV ± 6 mV

Blanking Level: 0 mV ± 15 mV

Horizontal Sync Width

1125 Line Format: Positive: 593 ns ± 40 ns;

Negative: 593 ns ± 40 ns

750 Line Format: Positive 539 ns ± 40 ns

Negative 539 ns ± 40 ns

525p: 2.35 μ s ± 0.05 μ s; 625p: 2.35 μ s ± 0.1 μ s

NTSC/PAL: 4.7 μ s ± 0.1 μ s (NTSC/PAL)

Vertical Sync Time: 5H (HDTV) / 6H (525p) / 5H (625p) / 3H (NTSC) / 2.5H (PAL)

Output Impedance: 75 Ω , 1-BNC

Return Loss: ≥ 30 dB (≥ 0.3 MHz, ≤ 39 MHz)

Timing Variable Range

H-Phase: $\pm 1/2$ Line; Resolution: 1 Dot

V-Phase: ± 1 Field ($\pm 1/2$ Frame Progressive)
Resolution 1 Line

F-Phase: ± 5 Frame; Resolution: 1 Frame